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OBSERVATIONS *on* DIFFICULTY *of* SWALLOWING; *by* DR. WICHMANN. *Communicated by Dr. Noehden.*

THE difficulty of swallowing, known by the name of Dysphagia, is undoubtedly a very distressing, and in some cases, a dangerous affection, which deserves the attention of every practitioner, as it is a disease whose diagnosis and particular nature are sometimes misunderstood, and not unfrequently attended with much difficulty. Some species of this affection are easily distinguished, while the nature of other idiopathic affections of the œsophagus requires a more accurate examination for being well understood; a circumstance by which their cure is greatly influenced. Difficult deglutition, considered as an idiopathic affection of the œsophagus, frequently originates in the following causes.

1. Diminished capacity of the œsophagus.
2. Spasms of the œsophagus.
3. Paralytic state of the organ, and relaxation of its membranes.

The general decursus morbi is so extremely similar in these different species, that they are easily taken for each other. The organs of deglutition are affected, the deglution is obstructed, which gradually increases, till not any thing is possible to be got into the stomach. Sometimes the disease proceeds so slowly, as not even to be perceived by the patient till after its having arrived at a certain degree of danger.

Those species of the malady are characterized by the kind of vomition with which they are accompanied, and which may rather be called a rumination, as it is merely produced by the muscles of the œsophagus, without the abdominal muscles taking any share in it. It is not attended either with nausea or any other disagreeable sensa-

tion, which constitutes the forerunner of common vomition. The appetite remains good. There are cases in which this rumination is observed for a long time, without any other symptom; the patient brings up the ingesta without great exertion; they get down again in small portions, and nothing remains in the mouth which ought to be thrown out. Thus far the abovementioned species of Dysphagia agree with one another; but they differ in other respects, which must be carefully attended to, in order to be able to distinguish them.

It is not uncommon that other membranes get thicker, and indurated; a circumstance by which their function is greatly disturbed, and several morbid phenomena produced. This also sometimes takes place in the œsophagus, the internal membrane of which grows thick and indurated, which obstructs the action of the muscular fibres and the deglutition, by diminishing the capacity or space of the œsophagus.

A constriction of the œsophagus likewise arises from indurations or scirrhosities at any single spot of that organ; from a pressure on it by an indurated gland, &c.; but all which causes are not the subject of our inquiry. A diminished capacity of the œsophagus may be assigned as the most common cause of Dysphagia. The patient feels a little pain, pressure, or tension down the œsophagus, or up to the shoulder blade; he fancies that he feels at a certain place as it were, a stoppage, and he clearly discovers the impediment in the œsophagus. The more downwards this seems to be, the more certainly we may conclude on an induration of the œsophagus; and if the disagreeable sensation extends itself to the cardia, it denotes a constriction, induration, and even a cartilaginous scirrhus of this part. If the patient feels the impediment in the 4th or 5th vertebra dorsi, it is very probable that the neighbouring glands are indurated. In this case, the sensation of pain and tension continues even after the deglutition, which is besides, more easy whenever the patient lies on his back. In this species of the disease, the ingesta are brought up again four or five hours after the meal; at first in a small quantity, but as the malady advances, a greater portion comes up within a shorter time after they have been taken.

The second species of Dysphagia, originating in a spasm of the œsophagus, is distinguished by the following characteristics. 1. The disease seems to make a remission towards the evening, when the patient swallows with less difficulty;

difficulty. This peculiarity, however, is only to be remarked at the beginning of the disease.—2. The impediment of deglutition is generally felt in the inferior part of the œsophagus, near the stomach, from whence the disagreeable sensation extends to the stomach itself.—3. The difficulty of swallowing comes on suddenly, and is immediately attended with a painful sensation.—4. Warm liquors get easier down the stomach than cold ones.—5. Liquors, slowly swallowed, go down to the stomach without any difficulty; whereas, if drank at once, or in large portions, they are immediately thrown up.—6. Other parts of the body are found to be equally affected by spasms.

The third species of Dysphagia is distinguished by the following phenomena. 1. It, for the most part, occurs in old people, being frequently produced by apoplectic fits.—2. The patient gets down solid food much easier than liquors.—3. The patient cannot point out the certain place where he feels the impediment.—4. No painful sensation, tension, or pressure is to be perceived in this case.—5. We can trace no impediment by means of a probe. Sometimes it is very difficult to distinguish this species of Dysphagia from that we have first mentioned.

There is another species of this complaint, nearly related to the latter, namely, that which arises from a relaxation of the membranes of the pharynx and from folds in the œsophagus. This affection, which must be deemed incurable, occurs very rarely, and particularly takes place in the upper part of the œsophagus and the pharynx, where it forms a pharyngocele. While the patient makes an attempt to swallow, he presses the ingesta into the sac, by which the œsophagus is entirely blocked up. These folds are very small at the beginning, increasing by degrees. Some remainders of food are then brought up by a sort of reaching, and a particular hissing sound is often heard. The vomition ensues soon after the taking of the food, and the patient throws it out, mixed with much mucus, which had been collected in the sac. This dangerous complaint sometimes supervenes to other species of Dysphagia, as, from the frequent attempts to swallow, the internal membrane begins to slacken; it is, however, to be particularly met with in old people.

In the first species of Dysphagia, mercurials are found of great service; but they are of no effect, indeed rather prejudicial, in other species of this disease. Of all the preparations of quicksilver, the corrosive sublimate seems to be particularly efficacious in this case. The spasmodic

Dysphagia indicates the use of camphor, opium, musk, &c. and in a paralytic case, large doses of extract. quassiæ were very serviceable. If the disease originates from a relaxation of the membranes of the pharynx, we should abstain from tormenting the unhappy patient with any kind of medicines, however distressing his state may be. The only thing to be done is to apply nourishing clysters.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A CASE lately occurred, which proves the necessity of a little more care in conducting Vaccine Inoculation, than has hitherto been observed by practitioners in general.

A child of Mr. Coxe, in St. George's Street, near the Asylum, having been inoculated for the Cow-pox by a Surgeon in the country, Mr. Coxe desired me to examine the arm in which the operation had been performed. No scar appearing, I inoculated the child again, and produced a perfect Vaccine pustule.

Had not this patient been inoculated a second time, a favourable opportunity of depreciating Vaccination would in all probability have been afforded to the enemies of that practice.

It must give great pleasure to the friends of Vaccination to hear, that it is introduced into Barbadoes. For this information I am indebted to Mr. Dale of Liverpool, who first practised Vaccine Inoculation in that town, and furnished a Surgeon going to Barbadoes with the matter, which proved successful.

Some Vaccine virus which I collected, was sent by the Rev. Mr. Smith, of Camberwell, to Revel; where it succeeded. Some months ago, Dr. Jenner received from the Surgeon Major of Revel, an account, that from this source Vaccination was rapidly spreading through that part of the Russian dominions, and had already been practised upon many thousands.

I have the authority of a nobleman, who resided as his Majesty's Ambassador at the court of Petersburgh, for asserting, that this salutary practice seemed to be more generally adopted in Russia than in England. This, I trust, will excite emulation in the breasts of our countrymen, and add a fresh stimulus to their exertions.

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On a former occasion I recommended tooth-picks, for the preservation and conveyance of matter. Would medical practitioners preserve it in this, or some similar mode, they would always have a supply in case of emergency. It is well known, that it retains its virtue more than three months; and in one instance, Dr. De Carro successfully used a thread six months and three days old; which he had carried in his pocket, wrapped up in a letter, from the time of its reception.

As a proof of the superiority of the method of preserving Vaccine virus on a tooth-pick, over those in common use, I shall copy part of a letter which I lately received from Dr. Tierney, of Brighton, who is well known to have been an early correspondent of Dr. Jenner, and who, since that period, had a considerable share in introducing it to the notice of the Professors in the University of Edinburgh, and published an Inaugural Thesis upon the subject at Glasgow.

"I shall be much obliged to you for a little more Vaccine virus on a tooth-pick, as you sent it before. I am much pleased with your mode. It answers extremely well. I have before sent Virus to Ireland several times; but, from some cause or other, it has not succeeded; until, some time back, I sent some after your manner, on a piece of quill, shaped like a tooth-pick.

"With this, some near relatives of my own have been inoculated; and it has succeeded completely. The account which I received will show, how many errors have been committed from ignorance of the true disease.

"When the medical men saw the pustule produced by this virus, they unanimously declared,—'That although they had been dabbling in the Inoculation for the Cow-pock THREE YEARS, this was the first case of TRUE COW-POCK they had witnessed.'—Such errors are not uncommon. Within a very short time, a female in this place, who said she had been inoculated for the Cow-pock two years ago, has had the Small-pox. On inquiry, it turns out, that she had only a slight inflammation of the part, which has left no mark behind. Every day's experience proves more forcibly the necessity of caution and attention in this practice."

Such have been the errors committed at Brighton, that Dr. Tierney will find it a difficult task to render the practice popular there; much, however, may be expected from his talents and exertions.

Instead of tooth-picks, I now use a small bit of ivory,

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formed like the tooth of a comb, and pointed like a lancet. The idea of these simple instruments was suggested by an ivory lancet which Dr. De Carro, of Vienna, did me the honour to send me, together with the second edition of his excellent publication. That instrument is extremely neat, and well adapted for carrying in the pocket. It is fixed in a handle of mahogany, and screwed in a case of the same. Were the whole made of ivory, it would be stronger.

I have directed the small instrument above described to be made by Mr. Jackson, a comb-maker in High-street, Bloomsbury. I call it a Vaccinator. Public institutions, and private practitioners, who have a great demand for Cow-pock matter, will find this information useful. When few persons are to be supplied, lancets made of ivory, platina, or gold, may be employed; but when many thousands of practitioners are wanting a supply every year, cheaper articles must be discovered.

Would every person who inoculates, charge some of these Vaccinators well, with matter taken at an early period, and keep them wrapped up in paper, or enclosed in the barrel of a quill, they would furnish him with a constant supply, and the propagation of the practice would be greatly promoted. The quill may be stopped with white wax: the heat necessary to melt sealing wax might decompose the matter.

It is proper to remind Inoculators, that when those instruments are employed, a puncture should first be made with a lancet; then the point of the Vaccinator, armed with the virus, is to be introduced, and held in the part for the space of half a minute or more. Afterwards the flat surfaces of the instrument are to be repeatedly wiped on the puncture.

One Vaccinator, well charged, may serve for inoculating more than one person.

These hints will tend to facilitate a practice, on which the preservation of human life so much depends. I cannot conclude this letter without congratulating you on the establishment of a Society, which intends to supply medical practitioners with Cow-pock matter gratis.

It is true, that by the sale of matter, a Vaccine Institution might be enabled to support, and even to enrich itself, without subscriptions; and in the course of a few years, we might see the edifice devoted to that purpose rise, like a phœnix, from its own ashes, with an inscription

tion paying the same compliment to Vaccina, as was paid to Augustus at Rome, *Invenit lateritiam, marmoream reliquit.*

I am, &c.

JOHN RING.

New Street, Hanover Square. March 20, 1803.

P. S. Since the foregoing was written, Dr. Jenner has done me the honour to call on me, and to communicate the agreeable and important intelligence that Vaccine Inoculation has at length succeeded in India. This information he received from Dr. De Carro, who sent the matter by way of Bassora. It is confirmed by a gentleman just arrived from India, whom Dr. Jenner saw soon after he had read Dr. De Carro's letter.

On the MEDICAL EFFECTS *of* PHOSPHORUS; *communicated by our Correspondent at Paris.*

FROM accounts which were published some time back in London, on the medical use of phosphorus, it appeared that this substance held a distinguished rank among the class of alexipharmics, and that it had been employed in a variety of cases with success, in restoring the vital energies. The Medical Society of Paris proposed, in the sixth year, the following question. "To determine, by experiment and observation, what are the medical properties of phosphorus, of the phosphoric acids, in what cases they may be employed with success, and what is their mode of action." The memoirs which were sent in consequence, were not conceived to answer the object, and the question was adjourned.

In the year 7, Cit. Sédillot published an account in one of the Journals of some observations which tend to the support of those already made in London, as well as of a memoir by Dr. Lentin of Gottingen, *De acido phosphori cariei ossium domitore;* in which the author proves phosphorus to be one of the best remedies with which the materia medica can be enriched. M. C. Pelletier pointed out in the Recueil Periodique, vol. 9, the best mode of keeping phosphorus deposited in sulphuric æther, so as to be able to regulate the dose; since when, a number of French physicians have obtained results from its use, which deserve notice, but which, owing to a wise precaution of the commission named to observe these effects, have not as yet been

been made public. In the mean time we think it useful to publish such isolated facts as come to our knowledge, which may help to place this medicine in its proper place, and the following seems calculated to answer this end.

On the Effects of phosphorated Æther in a Case of Paralysis and Atony of the Fibre, accompanied by Infiltration of Water in the cellular Membrane; by M. GAULTIER CHAUBRY; *read at the Medical Society,* 12 *Germinal, Year* 10.

OBSERVATION 1. Jean D. aged 40 years, fell sick on the 5th Brumaire, (27 Oct.). He was carried to the Hotel Dieu, labouring under putrid fever, for which *he was bled five times.* His legs and thighs were swoln, and he was extremely weak. A strong desire to revisit his native city, Rouen, induced him to quit the hospital the 24 Frimaire, (15 Dec.). The 25th, in the morning, the swelling had manifested itself in the scrotum and penis, and but little urine flowed. On the 26th the belly became distended, and the patient complained of a sensation as if girted by a large band. The pulse was small and slow. I conceived, says the author, this to be a fair opportunity for exhibiting the phosphorated ether, which I did to the quantity of ten drops in a common vehicle. The patient made a considerable quantity of water during the night. On the morning of the 27th the tension of the belly and the swelling of the scrotum and penis had diminished. I increased this day the dose from ten to fifteen drops, to be taken in three portions, at the interval of three hours. The urine flowed abundantly. 29th. The same quantity was administered with the same results and the addition of two stools. The 30th the swelling had disappeared from the scrotum, belly, and the greater part of the thighs. 1st and 2d Nivose, (Dec. 23,) the same treatment was continued and no swelling remained. His strength and appetite began to return; I gave more nourishment and eight drops of ether, which he continued in the same quantities from the 5th to the 8th. The 9th he experienced an appetite for food as well as for other enjoyments, and I entirely discontinued the medicine. The author concludes by observing that 117 drops of the phosphorated ether cured this patient, in which quantity he computes about $1_{\overline{5}}$ grains of phosphorus.

In a second observation, the author tells us of a woman, whose menstrual discharges disappeared at the usual period, without any inconvenience; she was now fifty-five years of age, had suckled five children, and came to Paris

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on business, where she was attacked the 30th of Vendemaire, (Sept. 23,) with putrid fever, which continued till the 27th of November, after which her legs and thighs swelled, and she had hardly the power of motion; her inferior extremities were generally cold. Urine came, but in small quantities, and the pulse was hardly perceptible. The phosphorated ether was administered as in the preceding case; the following night the patient passed somewhat more water, but the weakness was excessive, the pale colour of the face frightful, &c. The morning following the appearances were nearly the same, except that the extremities were become completely cold; ten drops of ether were given at three o'clock, and the same dose was repeated at nine. The pulse was become fuller and somewhat more appearance of heat in the lower extremities. 30th. At four o'clock she made a good deal of water; the pulse was weaker; the heat of the body was somewhat increased; the extremities still remained cold. Her legs and thighs were rubbed with phosphorated ether, and she took internally ten drops. At twelve o'clock the patient had stools and passed water. The heat and motion in the extremities, suspended for twenty days, began to return.

The 1st Nivose (Dec. 22,) I employed frictions in the morning, and six drops of ether three times a day; the power of motion continued to increase, and the swelling of the legs began to disappear. The 2d, 3d, 4th, and 5th, ten drops of ether were administered. On the 6th, the patient found herself well; a suitable diet was recommended, together with frictions with flannel. She had taken 128 drops of the ether independent of what had been used in the form of frictions.

The author gives some other cases, nearly similar in their nature, where he used with the same advantage the phosphorated ether; in one of them, where the stomach loathed the phosphorus, it was found that the addition of a few drops of ætheris acetati made it more palatable.

The author means to give, on a future occasion, an account of the successful use of this medicine in other cases, and concludes his paper by giving directions with respect to its administration. He recommends us to ascertain with the greatest possible accuracy, whether or not the patient labours under any particular irritation, or if inflammation be the cause of those complaints which we have to combat. He thinks it necessary to keep the ether in a bottle with a glass stopple, and to agitate the materials in it; he has not perceived that the phosphorus separated from the liquor

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with which it was combined, he only remarked that when exposed to much heat, or to the rays of the sun, the liquor became turbid; to avoid these inconveniences it is necessary to keep the liquor in a cool and dark place, and to wrap the phial in a piece of black cloth.

To Dr. BRADLEY.

DEAR SIR,

SINCE I wrote to you on the 19th instant, I have been favoured with a communication from Dr. Miller of New-York, stating the causes which prevented the appearance of my "*Reply*" in the Repository, and of which, in justice to Dr. M——'s candour and liberality, I shall make an abstract for insertion in the Medical Journal.

"After learning the real state of the case," says Dr. M——, "I am confident you will be less disposed to admit the suspicion of any improper motive in my conduct or in that of my colleague, Dr. Mitchill."

With respect to one point, namely, the interchange of letters, the interruption which happened on the part of Dr. Miller, I am truly sorry to find, was occasioned by the invasion of phthisical symptoms, from which he did not recover for several months, at which period no vessels were up for Londonderry, and none afterwards offered until the present season.

"As to your *Reply*," continues Dr. Miller, to the Strictures which appeared in the Medical Repository, on the opinions of yourself and Dr. Drennan, *it never came to hand.* If it had ever reached my hand, it assuredly would have found a place in the Medical Repository; for I never will be the advocate of opinions which require to be defended by the suppression of fair argument urged in opposition. If you will favour me with another copy, the Reply shall still be inserted. I suspect that others too of your communications to me have failed, from the vessels to which they were committed arriving at some distant part of the United States, instead of New York.

"I much fear that you and I cannot agree on the origin of pestilential diseases. But it does not follow from thence, that we cannot entertain the most sincere and candid esteem for one another, or that there is the least difficulty in reciprocating every obliging and kindly office. To cultivate the most perfect harmony, good understanding,

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and liberal intercourse with you, is my warm and unaffected desire. Let us not then suffer any improper suggestions, arising from any quarter, especially from suspicious ones, to make any hasty impressions on our minds, until the full evidence of facts, and indisputable facts, is set before us."

Most sincerely do I regret, that an unsuspected mischance should have given me the least reason to harbour for a moment the smallest idea adverse to the candour of a correspondent actuated by such generous and philosophical sentiments. As the circumstances, therefore, which influenced my reflections relative to the Editors of the Medical Repository, are before the public, it is incumbent on me to give equal publicity to my revocation of whatsoever has appeared from me unfavourable to the liberality of their print. And, I trust, that every reader of my *Reply*, in the Medical Journal, will do me the justice to allow, that I have not, in any one part of it, trespassed against the principles of fair and temperate discussion.

My esteemed correspondent, Dr. Miller, declares himself a sincere and ardent lover of peace, the value of which he sees more and more every day; insomuch that, for the sake of securing it, he is disposed to yield trifles, and even some things of more consequence. I can assure my friend, Dr. M.——, as I have more than once already done, that he cannot be more conscientiously devoted to pacific terms of disquisition than I am, as being the surest avenue to truth and solid knowledge; and I further assure him, that I am still governed by the sentiment which I before expressed to him:

'Nobis magis cordi est pacificus veritatis ingressus, quam qui pugnax est, viamque sibi per contentiones, et lites sternat.'

Perhaps some of the readers of the Medical Journal may be able to give an instructive answer to the following question, asked by Dr. Miller:—"Can you direct me to any source of full and satisfactory information concerning the best method of discharging from cities the filth of animal and vegetable kinds, constantly accumulating in them, and especially the filth of privies? We are engaged in endeavouring to make some improvements of this description in New-York, and wish to be instructed and assisted by the experience and wisdom of older cities."

Give me leave to second this wish of Dr. Miller, and to interest on the occasion your ingenious and philanthropic correspondents, whose contributions will very much gratify,

Your's, &c.

Londonderry, Feb. 26, 1803. W. PATTERSON.

EXTRACT *of a* LETTER *dated December* 1st, 1802, *from a Physician in Philadelphia, to* DR. PATTERSON *in Londonderry.*

"I HAVE now perused the abstract of my letter, with your notes, published in the Medical and Physical Journal, No. XXXVIII; and am perfectly satisfied with what you have done, as I believe your motive was a laudable one. However, I have committed some mistakes in that letter, with respect to the doctrines advanced by Dr. Latham Mitchill, of New York; and I therefore request, that you will do me the favour of transcribing the following correction, for insertion in the Medical and Physical Journal, as it would give me great concern to be thought capable of designedly misrepresenting any opinion in what manner soever it may be founded.

In stating the objections of Mr. Lee*, a medical student of this city, to Dr. Mitchill's doctrine, I have inadvertently omitted a paragraph, which gives those objections the appearance of inconsistency, and I have incorrectly said, Dr. Mitchill "denominates the *nitrous acid,* in a gaseous state, *gaseous oxyd of septon;*"† whereas, I should have said, Dr. Mitchill supposes that a substance, which he calls the gaseous oxyd of septon, and which is denominated by other chemists dephlogisticated nitrous air, is one of the products of putrefaction, and is the cause of pestilential fevers, &c. But the dephlogisticated nitrous air differs so much from common nitrous air, in consequence of the different proportions of the bases of azote and oxygen, of which, in conjunction with caloric, it is composed, as to produce exhilarating and salutary effects, instead of pestilential and destructive ones. I might also have added, that I have the authority of Professor Woodhouse to say, there are no proofs that such a substance as that called the gaseous oxyd of septon is ever formed by, or in consequence of, the process of putrefaction, though the nitrous or septic acid is a plentiful product of that process.

Dr. Strother,‡ who early in the last century, occupied much of his time in abstract speculations instead of experimental

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* This ingenious young gentleman, who bid fair to be an ornament to science, died last February of phthisis.

† Medical and Physical Journal, vol. VII. p. 317.

‡ Strother on Small-Pox and Plague, London, printed A. D. 1721.

perimental inquiries, imagined that, because strong acids produced vesications and corrosion of the skin when externally applied, they occasionally produced the small-pox and the plague, in certain situations where the air is highly impregnated with them, particularly by that acid which produces nitre on brick walls and in cellars. How far this doctrine agrees with Dr. Mitchill's relative to the cause of the malignant fever and the dysentery, I leave to the sagacity of Dr. Mitchill to decide.

For other objections to the doctrine of the New-York professor, I beg leave to refer to the Monthly Review, for 1797, vol. XXIII. p. 553, and to Med. Repos. vol. I. p. 246."

METHOD *of treating* INTERMITTENT FEVERS; *by* DR. MARCUS, *of Bamberg.*

INTERMITTENT Fevers seem principally to originate in direct asthenia, and the chief indication to be attended to in treating them, consists in augmenting the inciting powers to such a degree, that a just incitation be produced in the system of organisation. Above all, it is necessary to find out the degree of asthenia, in order to be capable of employing a proper degree of incitement, either by diminishing the incitants accordingly, or by increasing them; a circumstance, which can only be ascertained by the acuteness and judgement of the practitioner. It may be suggested, that in proportion to the greater degree of direct asthenia, the more ought the remedies to be of the volatile and diffusible kind; and the smaller the doses and the shorter the intervals, in which they are to be administered. This rule particularly deserves the attention of the physician. In Quotidians, therefore, more volatile inciting remedies are to be employed, and at the same time in smaller doses and intervals, than in Tertians, and in these again more than in the Quartans. In a high degree of debility, it is advisable to change the inciting remedies from time to time, to combine them in different modes, by which means their effects will be greatly heightened. The principal and most efficacious remedies that may be used in this fever, are opium, musk, camphor, æther vitrioli, alkalis, strong wine, warm baths, warm aromatic fomentations, spirituous frictions, a nourishing diet, meat, eggs, spicy preparations, &c.

In a Quotidian Fever, Dr. M. proceeds in the following manner: In the beginning he gives every hour, or every

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half hour, or every quarter of an hour, camphor and tincture of opium alternately, six drops of which contain one grain of opium; he begins with one or two drops in short intervals, raising the dose by degrees to five or six drops. The patient is at the same time put into a warm bath, which is mixed with aromatic herbs; he is rubbed over with spirit of wine, ordered to drink a glass of wine, and to take broth impregnated with spices. When this method is continued for some days, it is necessary to attend to its success, and if the patient should find himself better, the doses of the former remedies must be increased, and the intervals in which they are administered lengthened. It is a very essential point in this method of cure, that the remedies should be continued without interruption day and night, and the principal success, of which we may now boast in removing the fever in so short a time, seems to be owing to this circumstance, which has formerly been almost utterly neglected. It is generally the case that the medicines are discontinued by night, in which way the proper degree of incitation could never be attained, and the *stadium reconvalescentiae* is thus unnecessarily protracted, very much to the disadvantage of the patient. Another material fault in the cure of these fevers, according to the former method, consists in the remedies being discontinued during the paroxysm, or as it were, by too much inciting the patient by large doses, by which the degree of debility must be undoubtedly increased. If however in the above manner the incitation of all the systems of organization be gradually increased, and the due and congenial action of organism begins to be restored, which we perceive from the paroxysms becoming shorter, and more intermitting, &c. then it is advisable to combine the diffusible stimuli with permanent irritants or roborants, particularly in form of *infusum frigidum,* as with tincture of opium or æther vitrioli. About this time we may also allow the use of meat, but at the same time we ought to take care of not admitting the use of watery liquors, lemonade, &c. to which the patients frequently resort, in order to quench the thirst; vegetables and fruits are likewise to be strictly prohibited, by which the patients often experience a return of the fever. As a drink, we recommend a mixture of wine and water, but from time to time to take a glass of pure wine; if the circumstances of the patient should not permit him the use of wine, he may drink a mixture of alcohol with water, or an infusion of *flores arnicae* with liquor. anodyn. Hoffm. and take now and then a glass of any good liquor. In most cases we succeeded in removing

intermittent

intermittent fevers, in a short time, by only attending to this method of cure, and we were never obliged to resort to any specific remedy. The Peruvian bark is employed as a permanent inciting remedy, when the organs of assimilation have regained their proper action, or when the patient begins to recover; it is then given at first with volatile remedies, and afterwards by itself.

To the Editors of the Medical and Physical Journal.

Gentlemen,

I Am sensible that an apology is necessary for obtruding on you and on your readers, a subject which may appear, at first view, to have little claim to general attention. Were the rights and interests of an individual alone involved on this occasion, I should not have requested a place in your Journal for the following statement. But it is surely a matter of general concern, that the appropriation of inventions and improvements should be dealt with strict justice to their authors. For the prospect of this distribution of "honour where it is due," is one of the most animating principles of action; and the extinction of this motive would follow an indifference, on the part of the public, to the claims of inventors.

More than fifteen years ago, during the delivery of a course of chemical lectures in this town, by my father, he had occasion to notice a quality of acetic acid, or radical vinegar, which had not, to his knowledge, been before observed, viz. its property of dissolving camphire, and various essential oils. The compound was found to possess a most agreeable and pungent odour; and as the *vinaigre des quatres voleurs* had gained much reputation in preventing infection, it occurred to him that the newly discovered solution would have still more powerful effects, in consequence of its high state of concentration. A bottle of this preparation he gave to a late active magistrate and philanthropist, (T. B. Bayley, Esq. F. R. S.) who, in the course of an unwearied and undaunted exercise of his public functions, was frequently exposed to the dangers of foul and infected air. Mr. Bayley was highly gratified with its effects; and not only made constant use of the aromatic vinegar on the bench, and on his visits to the prison, but introduced it to the adoption of several of the judges, and principal gentlemen at the bar. He, also, first suggested to my father, the propriety of benefiting by his discovery,

and

and was the medium of a connection with Mr. Bayley, perfumer, in Cockspur Street, London, which has continued to the present day.

The aromatic vinegar, like every other article in general demand, has been a frequent subject of imitation. But it is not of this that I complain; for in consequence of unremitting assiduity, our preparation has maintained a superiority, both in quality and extent of sale, over all others. The occasion of this appeal to your readers is, that one of these imitations has been lately sanctioned by the name of a respectable physician, who, though not expressly, yet by implication, has bestowed on another the credit of that invention, which, in justice, is due to my father. (See an advertisement in the public papers from a druggist in London, containing a letter from Dr. Trotter, Physician to his Majesty's Fleet).

From the recommendatory letter of Dr. Trotter, it is evident that he was ignorant of any prior claim; and he was, therefore, made acquainted by my father, in the most respectful manner, with the facts which have been already laid before you. To this letter the Doctor has made no reply, though he declared verbally, to a medical gentleman, that my father's preparation had never happened to fall in his way; but that, if it had, he should with equal readiness have given testimony in its favour. The advertisement, however, continues to be regularly inserted; and I therefore deem it expedient thus publicly to appeal against the injustice of such a proceeding; especially in favour of a man who has imitated the original only in copying, with unblushing effrontery, the words of an advertisement drawn up by myself.

I believe there are few of your readers who will not decide, that the ordinary forms of civility required Dr. Trotter to have taken some further notice of the letter which was addressed to him; that such an attention ought to have been paid to one of the oldest practitioners of medicine in this country; and that more respect was due to a man (whom I trust it is not unbecoming in me to characterise, in terms already publicly applied to him, *viris laudatis*)* "respectable in science and in literature," and "distinguished by ingenuity, honour, and the strictest integrity."

I am, &c.

Manchester, March 13, 1803. WILLIAM HENRY.

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* Dr. Aikin and Dr. Percival.

To

To Dr. WILLAN.

MY DEAR SIR,

YOU will readily believe that your's of the 12th June, 1800,* did not lessen my anxiety to investigate a morbid poison which, it seems, I was the first to announce to the public, but on no other knowledge than what I derived from Dr. Jenner by means of Mr. Cline. If you ask, why I did not pursue the subject further, before my departure from England, my answer is, that when Mr. Cline, by my request, made his inquiries of Dr. Jenner, we were informed among other particulars, that the Inventor was engaged in experiments to ascertain the laws of the poison. After this, it appeared but justice to leave the whole in Dr. Jenner's hands, at least till he should offer the result of his experiments to the public. For this reason, much against my own inclination, I suppressed part of the information with which that gentleman, by a liberality that has marked every part of his character, favoured me. The probability that the Cow-pox originated in the grease from the horse's heel, and was the parent of the Small-pox, would very much have strengthened my suggestion, that "diseases in one class of animals, when communicated to another, seem to alter many of their properties, and also, that some of the morbid poisons which at present so much shorten the period of human life, might owe their origin to such causes."† But though Dr. Pearson had previously sent me a thread; though we had since received matter on glass from Lisbon, by means of Mr. Murray, our late consul general, and from Mr. Banger, one of our principal merchants; though the latter had actually procured a subject to be inoculated in the Tagus, who, had the insertion succeeded, would have arrived just in time for the maturation of the pustule, yet all our endeavours proved abortive. Nor were we more successful with matter from the Vaccine Institution in London, nor with some from Dr. Jenner, left us by different practitioners in their way to

* "The Cow-pox still keeps its ground, not less than 1400 persons having been inoculated without any material suffering, and without taking the Small-pox since. You will be pleased with seeing the progress of this singular complaint, which illustrates your ideas even better than the Small-pox." *Extract of a Letter from Dr. Willan to Dr. Adams.*

† See Morbid Poisons, p. 155 and 156.

the East and West Indies. What added greatly to our disappointment was, that the Small-pox, from which we had been free for ten years past, now visited the island with such fatality, that many parents, who had hitherto rejected every proposal for inoculation, were anxious to avail themselves of it.

Such a calamity called for every means that could be suggested by the Faculty, or enforced by Government, to arrest it. Availing myself, therefore, of the disposition of our Governor, I requested that every means should be made use of to discover whether the disease existed among any of the cows; but after the most diligent inquiry, only a single case occurred, and this by no means characteristic. Trial was however made, but without effect.

At length the arrival of Dr. Gill, in his way to Barbadoes, proved the fortunate event that was to introduce this blessing among us. As we had hitherto all failed in our attempts, Dr. Gill was prevailed on to undertake the management of some dry matter he brought with him; but he was equally unsuccessful. He favoured me with a glass; and as there are some circumstances which hitherto have not occurred, or at least have not been observed, I shall take the liberty of being very particular in my narration. And first, it is necessary that I should describe the scene of my experiments.

From E. N. E. of this town, we have the easiest ascent to those mountains which divide us from the north side of the island; on this account it was probably our earliest road. About a league from Funchall is a small district called *Palheiro do Ferreiro*, or the Blacksmith's Shed, probably because at this place a forge had been erected, to reinstate such shoes as had been cast in this short journey from the town over an ill paved road. Though the improvement of the country has rendered this resource less necessary, yet the remains of the shed existed in the memory of some people still alive, and a clump of chesnut and walnut-trees, now grown to a venerable size, serve to mark the spot, and perpetuate, if not the name, at least the trade of the planter. From this clump you have a view of the sea, by an opening between a high hill and the northern mountains. The prospect is rendered more picturesque by the islets called *Desertos* presenting themselves, and because from the elevated spot you stand on, the sea is visible beyond the high rocks of which those islets consist. Occasionally also the sight of a convoy or single vessels enlivens the view, and awakes the mind from

from the contemplation of still life by the expectation of letters or intelligence from Europe; for by this route they should always pass for the Bay of Funchall.

It is not to be wondered if Mr. De Carvalhal, the gentleman of the first landed property in the island, and whom you probably met with during his seven years residence in England, should fix on such a spot for his country residence. Here he has built a pavilion in the modern English style; and having the advantage of more level ground than the country usually affords at such an elevation, has availed himself of the climate to form a retreat much resembling the description of Cyrus's garden, as given us by Zenophon. You will readily conceive the influence which well-directed wealth must produce in such a neighbourhood, every individual of which is growing richer and happier, by being constantly employed when in health, and assisted under illness or any other distress.

Fortunately this was the only place near the town that had not been visited by the Small-pox. For this and other reasons, it was the most desirable place for introducing a medical improvement like the Cow-pox. The recommendation of the *Morgado* (a term similar to that of Laird in Scotland) was sufficient to make the practice popular among the tenantry, especially as the little loss of time that might attend the bringing of their children was always compensated to the parents.

All our attempts had hitherto proved ineffectual; having, therefore, thought long on the subject, I determined to avoid all those inconveniences to which our former ill success might be imputed. Four young subjects were selected, on each of whom two punctures were made. After this the tip of a small camel's hair pencil was dipped in water, and the vaccine matter worked with it in the same manner as painters work their water colours. By the time a complete solution was effected, the little punctures ceased to bleed, and what blood had collected was carefully wiped off; the orifices were then *painted* over, and the usual caution observed to leave them to dry.

On the fourth day I renewed my visit to the *Palheiro do Ferreiro*,* and received the usual account that none of the insertions had succeeded. As I could not myself find out the different cottages, and as all my former examinations

* Since called by the governor, on the first visit he made to that place, *Bem fico*.

tions had made me familiar with this intelligence, I was easily satisfied with the accounts of others.

In this state things remained till Sept. 17, an exact lunar month from the day of inoculation, when I received a letter from Mr. Carvalhal, to inform me that we had at last succeeded. At the same time, Mr. Eeles, an English gentleman on a visit at the house, wrote me word that the subjects inoculated might furnish matter for the whole island. You will easily conceive I lost no time in going, fearful lest the pustule should be broken or become dry. On my arrival the patient was sent for, and I leave you to guess my astonishment at the sight of a boy completely covered with Small-pox pustules. Such were my first impressions, and such my amazement, that I remained for some time motionless, till roused from my reverie by a general burst of laughter from my surrounding friends. Though awakened from my first surprize, I could not heartily join in the laugh. After satisfactory assurances that this was among the subjects inoculated, I examined the arm, but could find nothing to distinguish the inoculated part. I next proceeded to dissect the pustules, as I have called them, but found them mere vesicles filled with transparent lymph. On searching for the slough which should have lined the *foveolus*, I found the bottom red, and on a level with the *rete mucosum*, the cavity being entirely made up by the elevation of the cuticle. On inquiry, it appeared that the present was the seventh day from the commencement of the fever, and the fourth of the eruption. I ought to have observed, that the pale vesicular appearance was sufficiently distinguishable on the first view from the usual appearance of so large a crop of Small-pox; but it was not at all unlike that species which Mead calls the chrystalline. Whenever you meet with these again, I wish you would search for the slough.

All that remained to satisfy every remaining doubt was to enquire, whether there was a chance of any previous exposure to variolous infection; to try the effects of inoculation from this subject; and, lastly, to allow an uninterrupted intercourse with the neighbouring cottagers at home and in the field. Two subjects were brought for inoculation, in one of which I discovered a cicatrix which led me to suspect he had been inoculated at the same time as my eruptive patient. Such I was informed was actually the case, which was confirmed by the event of two subsequent inoculations with recent matter; so that he must have

have gone through the process with so little inconvenience, that the whole was entirely overlooked.

From this time my *eruptive* patient, having no fever, and finding less inconvenience from the eruption than might be expected, continued with his family and the neighbouring cottagers, without either restriction or medicine. In about a fortnight's time, a child at the breast appeared still fuller of a similar eruption; the face was completely covered, but without any confluence. Satisfied that the former case must be Vaccine, I conceived I had now made a discovery that the disease, under a full eruption, might be infectious. I was however informed, that this was among my first inoculated subjects; and on examining the arm, there appeared a vesicle somewhat larger than the rest, though without the indentation that usually marks the inoculated spot; it was in a similar stage with the others, towards maturation. The vesicles, in whatever part of the body they were examined, appeared as in the former case, red at the bottom, without slough, and the fluid limpid. In both subjects, as the vesicles dried, they rarely left scabs, the new cuticle being formed under the old one, as in a common blister, where the dead skin, as it is called, is preserved.

I was now in daily expectation of seeing other children casually infected; but as both these had been inoculated, the event was still doubtful. Several subjects were inoculated from the last, in succession, in order to preserve the recent matter; but only one had a few vesicles, which appeared after the exciccation of the insertion. The second eruptive case went through the disease without a single untoward symptom, without medicines, and without caution. Being, as before remarked, at the breast, she was constantly in arms; and when abroad, under the woman's woollen cloak: when at home, confined to a small cabin, intended in this mild climate only as a shelter from rain, or retirement for sleep. Under all these disadvantages I watched eagerly for the eleventh day, which passed off without any secondary fever. In a few days after, the mother made a pilgrimage with her child to St. Antonio da Serra, to fulfil a vow made during the illness. This is an undertaking which few women but natives would have ventured upon, even if unincumbered; for though the distance is not more than two leagues, yet from the nature of the country, it could not be accomplished in less than twelve hours. As our rainy season had now approached, and as those high hills, even in the summer, continually

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attract the clouds, you will not wonder if she was retarded in her journey. Her small stock of provision was soon exhausted, and there were no means of procuring more. You will easily judge what must be the state of the poor convalescent infant. However, they survived this pious journey; the woman preserved her milk, but the child afterwards proved anasarcous. By a little bark for the infant, and the assistance of a more generous diet from the pavilion for the mother, both soon recovered, and are now in perfect health.

Such is the history of these cases. Let us now attend to the inferences which may be drawn towards ascertaining the laws of Vaccination. After a close inquiry concerning the two subjects, I was convinced there had been less intercourse between them than most of the other cottagers and their children. The boy being a cow-herd, was constantly in the fields during the day, and when he returned at night slept in a cot with a child who never received the infection. The infant, according to the custom of the country, was constantly with its mother, who spent her time with her neighbours at the door of their cottages, or of her own. In these parties the children always mix; and such is the general intercourse, that an infectious disease never fails to spread among them. But though the inoculation was continued only in classes, in order to perpetuate the recent lymph, yet none were casually infected, and the inoculation produced universally such mild symptoms, that the mothers could hardly believe their children would be thus easily *sempre livros da bexigas*, for ever free from the small-pox. How then should these appearances occur, so different from what has hitherto been remarked? The following is the only rational solution I can offer.

My reason for being so particular in describing Mr. De Carvalhal's house, was, that you might be aware how directly it is exposed to every breeze from the south-east. Those hot winds called in Africa, Harmattans; in the Mediterranean, Levanters; and in Italy, the Sirochs; occasionally visit this island, which is I believe the westernmost point of land at which they ever arrive. I need hardly refer you to Lynd or Norris for an account of the Harmattan, to Brydone for the Siroch, your own acquaintance among such as have visited the Mediterranean, will refresh your memory sufficiently. It is enough for me to give you some account of what we call a *Leste* in this country.

Whenever the wind blows from the South East, we have for

for the most part warm and dry weather, but at certain periods there is a kind of gloomy serenity in the air. The sun seems less powerful, being obscured by a general haziness in the atmosphere, yet the heat is much greater; and such is the universal dryness, that our mahogany card tables are warped, delicate pieces of inlaying fall out, and sheets of veneering, which cover larger furniture, blister and break off. The mucus of the eye is so soon exhausted that a painful kind of stiffness is felt, accompanied with a sensation like scratching, whenever the eye-lids are brought over in order to restore the necessary moisture. Most, perhaps I might say all, of the hygrometers in the island, constructed on the principle proposed by Doctor Franklin, have become useless, probably by never recovering from the injury they sustained during these winds. Those I received from Mr. Lane, are too limited in their scale to show any thing like the dryness of these winds.

You will readily comprehend, that though the valley in which Funchall is situated, is warmer than most other parts of the island which enjoy the benefit of the sea-breeze, yet as we derive this advantage from being sheltered from every wind but the South; so when a *leste* prevails, it is somewhat tempered by the interruption of our eastern hills. Hence *Palheiro do Ferreiro* being the first high lands exposed to these currents, receives its full shock. At the time the subjects were inoculated, we had a more violent and longer continued *leste* than I have ever experienced. The natives complained more of it than the English, and were apprehensive of very serious consequences to their vines; many of these suffered exceedingly, and even some of the oranges and hardier chesnut trees were considerably blighted.

If the *leste* continues long, the thermometer hovers about 80°, rarely exceeding it in the middle of the day, and seldom falling much lower early in the morning. This heat might be tolerable, if we derived any advantage from our breezes; but at these times the air itself conveys the fuel. In the town it seems a little tempered by our Inbat from its passage through the Gullies; but at the Palheiro do Ferreiro they have not even this relief; and at the time I am speaking of, the air absolutely seemed to scorch.

In the midst of all these inconvenencies, some advantages are derived from the *lestes.* Invalids who resort hither, particularly for pulmonary complaints, find a relief which so animates them, that they usually express a wish

for a perpetual *leste.* But this leads me to Norris's account of these winds in Africa, part of which I shall transcribe.

"So far, says our author, its effects on the animal and vegetable world are very disagreeable; but it is also productive of some good. The state of the air is extremely conductive to health, it contributes surprizingly to the cure of old ulcers and cutaneous eruptions. Persons labouring under fluxes and intermittent fevers generally recover in a Harmattan; and they who have been weakned and relaxed by fevers, and sinking under evacuations for the cure of them, particularly bleeding (which is often injudiciously repeated) have their lives saved in spite of the doctors. It stops the progress of epidemic diseases: the small-pox, fluxes, and remittent fevers, not only disappear, but they who are labouring under them are almost sure of a speedy recovery. Infection is not then easily communicated. In the year 1770, I had above 300 slaves on board a ship in the Whydah Roads, when the small-pox appeared among them. The greater part of these were inoculated before an Harmattan came on, and about 70 underwent that operation after it sat in: the former got very well through the disorder; none of the latter had either sickness or eruption. We thought we had got clear of the disorder, but in a few weeks it began to appear among these seventy. About fifty of them were inoculated a second time; the others had it in *the natural way.* An Harmattan came on, and they all recovered, except one girl, who had a malignant ulcer on the inoculated spot, and afterwards died of lock jaw."*

After the above statement, it surely implies no disposition to theory, should we admit that in those subjects on whom the Cow-pox appeared over the whole body so long after all expectation of infection had been given up, the local infection had been superceded by the *leste.* That afterwards when, to use the very words of our author, "we thought we had got clear of the disease, it should appear in the natural way." Out of seventy of his cases, twenty took the disease with all the symptoms of the natural small-pox. It is a fair inference, though not at all necessary to our purpose, that in consequence of this appearance, the other fifty were inoculated: if so, it is by no means certain that they would not also have shown the

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* See Norris's Memoirs of the reign of Bossa Ahadee, king of Dahomy. Also Literary Mag. Vol. III. p. 254.

the disease in the natural way, had it not been superceded by inoculation.

If these premises are admitted, and till you point them out I can see no objections, we may draw the most important inference; namely, that the Cow-pox, in its worst state, without the assistance of inoculation, appears not to be infectious, is not dangerous, and alters none of its properties when renewed by inoculation. If after this, a few solitary instances of suspicious infection should occur, they can have no iufluence in lessening our opinion of the importance of the discovery, or our gratitude to the Discoverer.

Though I had got over my difficulties so far, they were not to end here. Having inoculated all who had not previously received the Small-pox near Palheiro do Ferreiro, my next business was to bring the infection to town. In this I had no difficulty, as the Morgado sent me a child for that purpose on whom the lymph was recent, and I had previously procured a subject. But the Small-pox had been so universal, that no individual could be procured, excepting those few who had been born since that disease had ceased among us. In order, therefore, to secure a succession of fresh matter, I obtained of our Governor permission to inoculate all such exposed children as are supported by government. Unfortunately, those in the town had previously taken the Small-pox; and of such who were brought from the country, I could receive no satisfactory accounts.

It is unnecessary to particularise all my cases in the town. Suffice it to say, they were all children at the breast; that none of them had alarming symptoms, or took medicines; that only two had secondary vesicles; that in one of the last, the symptoms did not appear till twenty days after inoculation, yet this case exhibited the most beautiful specimen of the disease of any, showing a circle not less than an inch and a half in diameter, as exact as if drawn by a compass and shaded by a pencil. The secondary vesicles did not appear till the centre of the tumour had scabbed. From the secondary vesicles two children were inoculated; one of whom went through the disease without fever, and with no eruption but from the arm; the other had secondary vesicles. From these, five others were inoculated, none of whom had secondary symptoms, and scarcely fever.

But in the midst of all my successes, I was alarmed by a piece of intelligence which seemed to put all myformer theory at defiance. In the family of the second infant inoculated

inoculated in the town, and on whom secondary vesicles appeared, I was informed that a child belonging to the wet nurse had caught the Small-pox of his foster brother, and was full all over. You will suppose I lost no time in examining the truth of this story. In my way, however, I was willing to make large allowances for the imperfect accounts of uninformed people, suspecting I might find a cutaneous eruption very little resembling the Small or Cow-pox. Even admitting the account true, as to the disease, it seemed easy to suppose that the child might have brought the Small-pox from the country; or, having arrived fresh in town, might have felt the effects of a still tainted atmosphere, to which an infant who first breathed in it might be insensible. However, the sight of the patient precluded all doubts. The form, complexion, and even dissection of the eruptions would omit no question. The vesicles were even broader and flatter than in either of the preceding cases. Without therefore attempting any theory, I satisfied myself with making inquiries as minute as possible. Whilst I was thus engaged, a shrewd Portuguese gentlemen arrived, and laughing heartily at my surprise, addressed me thus:

"We have," said he, "an old Spanish proverb, which asserts, that dirty water will wash clean. Know then, my good Doctor, that during the whole time the child you inoculated was under the disease, his whole body was washed every day in cold water. If this was wrong you are answerable for it, as you not only refused us any physic, but desired us to make no alteration from our usual mode of treating the child. However, you are not answerable for what followed, because you could not suspect that as soon as the patient was washed, the nurse made use of the same water and the same hand, unwiped, to wash her own child; and, by continuing this process every day, produced an universal inoculation; for though we are so fond of washing our infants, we do not think it at all necessary to wipe them afterwards."

By this practice you will easily conceive that the skin of young children frequently chaps, as we find the case with those whose hands are often wetted without being well wiped. But even supposing the skin sound, which is rarely the case with the infants of poor people in this place, I see no reason why lymph, thus diluted, should not produce all the effects above-mentioned; and if so, may not a strong sensible perspiration, under particular circumstances, come so loaded with virulent particles as to

to affect the skin of a person sleeping in the same bed, without the ordinary inlets to infection, I mean by the lungs?

That matter, when very much diluted, still retains its virulence, is proved by every inoculation with dried lymph; and that the broken skin is not necessary to produce the effect, is evident in most cases of what is called casual inoculation from the cow or horse. Dr. Jenner remarks, in a note on his fifth case,* that, "when the Cow-pox has prevailed in a dairy, it has often been communicated to those who have not milked the cows by the handle of the milk pail."

The patient, whose case he describes, had many of the Cow-pox sores by handling the utensils used by the servants at that time infected. These sores were communicated to her nose, which became inflamed and very much swoln.

But to proceed with our case. I do not remember ever to have seen so melancholy a spectacle in every part of the body, excepting the face, even in the Small-pox. Whether this arose from all the vesicles being primary ones I will not pretend to say. However, they had all much the same appearance. Those on the face dried as readily as those on the body; we had no secondary fever, no salivation, no diarrhœa, no remedies were administered.

The event proved no interruption to the progress of Vaccination, the reputation of which is so well established, that nothing but a want of subjects will prevent its perpetuation. To assist my endeavours in this respect, I have had every assistance I could wish for from government, and the most respectable among the Portuguese, as well as our vice-consul, Mr. Cock. I have already mentioned some of the services derived from the former, but gratitude obliges me thus publicly to acknowledge the attention of our Governor to the welfare of his province, and his liberality to a stranger.

In the midst of my pursuits, I was interrupted, in consequence of having agreed to part with my house to the owners, and disappointed in my expectations of another. A small house would not answer my purposes, and it was too late to set about repairing a large one. Under these circumstances

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* Page 41, first Edit.

circumstances, his Excellency Don Jose de Camera, &c. used all the influence that became him to release me from my engagement; and when he could not do it, consistently with his love of justice, gave me my choice of apartments in the Jesuits College, that I might no longer be interrupted in what he conceived a national pursuit. Those gentlemen were so universally celebrated for the care they took to be well accommodated, that it is unnecessary to add how well we are lodged, or how agreeably situated; conveniences I enjoy with the greater pleasure, now that I have this opportunity of publicly acknowledging them.

Adieu, &c.

Madeira, Dec. 30, 1802. JOSEPH ADAMS.

OBSERVATIONS *on* APOPLEXY, *illustrated by* CASES; *by* J. MAGENNIS, *M.D.*

THERE has been already so much said on Apoplexy, and so many sheets of your valuable Journal occupied by the Controversy to which it has given rise, that there seems some degree of hardihood in venturing to renew the subject; but to acquire just notions of this formidable malady is so important to mankind, that any Observations that have a tendency to elucidate a point in which so many have differed, will, I trust, suffice to plead an apology for bringing before the public once more, a question which, by a kind of tacit consent, seems to have been abandoned by both parties, without the arguments adduced, I fear, bringing conviction to either.

My attention has been awakened to the consideration of the subject by a case, detailed in the sequel, which lately occurred at the Royal Hospital, and by the painful Controversy above alluded to. Comparing past experience with more recent observation and reflection, there results from the comparison a persuasion that Apoplexy arises much oftener from congestion, or a preternatural accumulation of blood in the vessels of the head, than from extravasation or exudation. This opinion is strengthened not only by the history of the following Cases, and many others related by men of the first eminence in the profession, but also by the frequent and rapid recoveries from such attacks. Dr. Quin, of Dublin, who has written an excellent Treatise on Apoplexia Hydrocephalica, cites two Cases, where no extravasation of blood or effusion of lymph

lymph was found, a circumstance that excited much surprize in him.

The opportunities afforded of examining into the cause and morbid appearances of patients dying of Apoplexy are few, because this disease generally attacks people in the higher circles of life; the opulent and sedentary, and those capable of indulging in the pleasures and sensualities of a luxuriant table: hence the difficulty of ascertaining its real seat; and hence the prevalence of opinion, that rupture and extravasation are commonly the cause of Apoplexy. But it appears to me, that the vessels of the brain are too closely and firmly supported by the bones of the cranium and surrounding membranes, the dura and pia mater, to be often subject to injuries of this nature, except from great and unusual violence; and I am inclined to think, that a rupture of these vessels, and extravasation of their contained fluids by the mere impetus of the circulation, derived from the force of the heart and arteries, is a circumstance which very rarely occurs.

The speedy and complete relief so frequently experienced in this frightful complaint from blood-letting, both general and local, joined to other evacuations, would seem still farther to strengthen and confirm this supposition; besides, hitherto, the discovery of a series of lymphatics in the brain, has eluded the researches of the most accurate and keen-sighted Anatomists, assisted by all the improvements of modern science. It is indeed to be presumed from analogical reasoning, that Nature, so wise and provident in all her provisions, has not omitted to furnish so essential an organ with an absorbent system, though too minute to be detected by human ingenuity. If there be such an order of vessels, they open principally by very minute, imperceptible points into the ventricles and other cavities of the brain. Admitting, then, the existence of lymphatic veins in this viscus, their extreme minuteness would render them unequal to the office of absorbing such a portion of extravasated fluid as should induce a suspension or temporary abolition of the powers of sense and motion, to account for the speedy and almost immediate relief often derived from a copious bleeding. If it be asserted that the inhalent veins carry on the important function of absorption, it may be answered, that we have no evidence of the red veins supplying the place of lymphatic vessels in other parts of the body, except in the corpora cavernosa penis; and though we admit the existence of those veins, it is probable that they will be rendered less

less capable or wholly unfit for performing this office, by the fluids, emancipated from their natural channels, now acting the part of a foreign body in compressing them. It is pretty well ascertained, that in all cases of extravasation occurring from blows or other external injuries received on the head, the patient is only to be relieved by an operation, in order to give issue to the compressing fluid.

It will follow, then, from a due consideration of these premises, that extravasation and exudation, in any given quantity so as to induce a sudden and total abolition of sensation and motion, will commonly, if not invariably, prove fatal. The natural inference deducible from these supposed facts, is, that in almost all recoveries which follow apoplectic attacks, compression of the medullary substance of the nerves from repletion and congestion in the veins and arteries of the brain has been the efficient cause. As dissection has, however, clearly demonstrated the existence of effusions in subjects who have died of this disease, may not these effects have arisen from the mouths of the exhalent arteries being so disposed, just before or immediately after death, from previous repletion and its consequent relaxation, as to permit a portion of blood and serum to pass out, or even to exude through the coats of the vessels themselves? So that what we consider as the cause of dissolution, may only be the consequence of it. And although the vessels of the head should have yielded to the pressure of their distending fluids, this does not necessarily depend on vascular tone and increased rapidity of circulation, but probably on atony and diminished excitement in these vessels favoring a preternatural accumulation.

Without attending particularly to the nosological definition of Apoplexy as usually given by systematic writers, or meaning to include all its varieties, I shall chiefly confine myself to that division of it, characterized under the titles Sanguineous and Serous; which, I think, may be more appropriately defined, a congestion of blood in the vessels of the head inducing a compression of the brain followed by a loss of sense and motion. Of this, there are three principal species; the first arising from increased vascular tone throughout the system, with an undue determination of a rapid circulation to the head, and may be denominated, General Sthenic Congestion. The second arises from local inflammation some how or other induced, that is, inflammation confined almost solely to the head, with little

little or no general inflammatory diathesis; this may be defined, Local Sthenic Congestion. The third species is supposed to be derived from an atony or debility pervading the substance of the brainular vessels, thereby rendering them incapable of transmitting the quantity of blood received, which gradually accumulating and distending their coats, ultimately produces compression; this may be aptly enough characterised, Atonic Congestion.

If these definitions be consonant to the phenomena known commonly to attend the different varieties of this fatal disease, above alluded to, when the morbid appearances previous to and after death are carefully observed and compared, what are the rational indications of cure which this classification points out? And is the proper mode of treatment more obvious from Apoplexy thus defined, than under the former titles, which were so denominated from effects observed probably after death, viz. extravasation or effusion of blood and serum, but which have a manifest tendency to mislead the judgment of the practitioner into dangerous errors?

Numerous examples of the first kind are cited by almost every writer, ancient and modern, who has written on this formidable disorder, though probably it is the least frequent of the three. It usually attacks the young and vigorous, at or about the age of puberty, who live high and take violent exercise. It is produced by a variety of causes, and is commonly supposed to terminate in rupture of the vessels and extravasation of blood, or in effusion of coagulable lymph on the meninges or into the ventricles of the brain.

The proper treatment of this species is very obvious; the lancet is to be freely employed, as the system will bear general bleeding to great extent; and here indeed it becomes absolutely necessary to prevent the disease from running into its last and most fatal stage; copious evacuations by the intestines are likewise to be procured; and the application of cold to the head, frequently renewed, will powerfully contribute to calm the internal tumult. These, joined to other subordinate remedies which readily suggest themselves to the experienced practitioner, are the means most likely to succeed in warding off the destructive effects of General Inflammatory Congestion.

James Thomson, a young man twenty-four years of age, very muscular and athletic, had been much exposed for two days to the effects of a burning sun, during which time he laboured hard, and drank freely of spirit and

water,

water, but not to excess; was three days after suddenly seized with symptoms of compressed brain, on the 3d of May, 1790. He had complained some hours before of severe head-ach and nausea, with lancinating pains through the temples and down the neck. When called to him, which was in twenty minutes after the abolition of sense, and in great measure of motion, I found the countenance of a dusky red, the vessels of the conjunctiva much inflamed, with stertorous breathing and a strong bounding pulse. From twelve to fourteen ounces of blood were immediately taken from the arm; scarifications made on the neck and temples; and as soon as the hair could be removed, cloths dipped in vinegar and water were applied all over the head, and frequently renewed. In a few minutes after these applications he opened his eyes, as if awakened from a profound sleep, and gradually recovered his intellectual powers. In ten days more he was free from complaint. The good effects of the topical cold affusions were here conspicuous; and they will be found, I believe, among the most powerful means of subduing the internal tumult of the brain in similar cases.

Miss W. a young lady about sixteen years of age, who, from a state of the utmost languor and debility owing to chlorosis, had been in the course of three weeks restored to vigorous health by the powerful assistance of steel; but who having continued the use of the medicine too long, and a costive state of the body supervening for several days, was suddenly and unexpectedly attacked with Apoplexy. The medical gentleman under whose care she had been, a man of great abilities and much practical observation, being then in the country, I was sent for, and by my desire Sir F. Milman; but he being at the moment absent on professional duty, did not arrive till long after. I found the patient deprived of all sense and motion, the countenance of a purplish hue, the eyes suffused, attended with stertorous breathing and a hard full pulse. Eight ounces of blood were immediately taken from the arm, an acrid cathartic enema administered, which copiously evacuated the intestines; cupping glasses were applied to the neck and shoulders, by which means seven or eight ounces more of blood were abstracted. Shortly after this she began to recover, gradually regaining her understanding; and by the time Sir F. arrived, she was perfectly collected. There could be no doubt respecting the cause of this attack; she had been for some days previous, in the highest health and spirits, strongly indicated by ruddiness of countenance and firmness

firmness of fibre. Thus circumstanced, and still under the powerful influence of the same stimulus which had produced such salutary changes, we cannot be surprized at the consequences that followed. Some weeks elapsed, however, before the system recovered from the bad effects of this excess of stimulation.

The second or local Sthenic Congestion is, I am persuaded, one of the most frequent causes of Apoplexy, and if not arrested by a speedy and judicious treatment, applied early in its commencement, the disease will run rapidly into indirect debility, the elasticity and irritability of the vessels will be diminished, their fibres elongated and weakened, their force and density as living solids gradually impaired and ultimately destroyed; hence accumulation and incurable Congestion.

The modus medendi in this species, is not so obvious as in the former; general bleeding must be employed with greater caution, as it tends much to weaken the vis vitæ, without abating in any considerable degree the morbidly increased action of a part. One general bleeding is therefore admissible and necessary; but it ought to be, in every possible case, from the jugular veins; and if during the operation, compression can be made on the carotid arteries, to retard the circulation to the head, whilst the surcharged sinuses and vessels of the brain are emptying by the emission of blood from the jugulars, the solution of the inflammation will be more speedy and complete. After this, recourse must be had to local blood-letting by leeches to the temples and forehead, as well as cupping and scarifications on the neck; the head shaved, and covered with cloths dipped in cold vinegar frequently renewed; blisters applied along the course of the sutures, will tend to lessen the tension of the communicating vessels by their stimulus and the discharge of serum which they procure from the neighbouring parts.

Both sexes are subject to affections of this nature, those especially who indulge much in the luxuries of the table, and who lead a sedentary and indolent life. It generally attacks persons from the age of forty-five to sixty, who are frequently seized two or three hours after dinner, when the stomach is distended with food, which pressing on the descending trunk of the aorta, determines a larger portion of blood to the carotid and vertebral arteries, while its stimulus increasing the activity of the chyliferous and lymphatic system, supplies the circulation with fresh fuel. The impetus of an additional quantity of blood acting on the

vessels of the head, already predisposed probably to inflammation from venal plethora often subsisting at this period of life, powerfully assists in producing local Sthenic Congestion. Great bodily efforts, watchings, fatigue, anxiety, and mental exertions, strongly predispose the habit to this species of Apoplexy.

A gentleman of the first respectability and connexions in life, aged about forty-five, of a fair and florid complexion, and apparently of strong and vigorous health, under considerable anxiety of mind, travelled three or four days and nights without any repose, except what he casually took in the carriage during the journey, was seized a few days afterwards without any previous existing complaint, and after all cause of anxiety had ceased, with symptoms of compressed brain. He had occasion to go out in the morning to transact some business, and with some difficulty found his way home; a few minutes after his return, he complained of pain in the head, and almost instantly lost the power of speech, which may be said he never after regained. The family surgeon was immediately sent for, but unfortunately he was out of the way; a physician of the first eminence was then called in, who did not arrive till between six and seven hours from the commencement of the attack; he directed a very copious bleeding instantly, and made every other possible effort to save the patient, but all to no purpose; he gave at one time some hopes of amendment for a day or two; but like Major, a case to be mentioned, he expired in a few days. The state of the brain was carefully examined after death, and all its vessels were found prodigiously distended with blood, without the least appearance of extravasation or any kind of effusion whatever. Thus Congestion of a few hours standing only, and notwithstanding the ablest assistance and most skilful treatment, terminated fatally in the course of a few days.

How much is it to be lamented that intemperate language and angry invective, are so frequently substituted in medical disputation for dispassionate reasoning and urbanity of manners; in no other professional writers do we observe such heat and illiberality to their opponents, if the reformers and religious controversialists of the sixteenth century be excepted. Much abusive contention has lately arisen respecting the propriety and utility of exhibiting emetics in cases of Apoplexy; and however we may deplore the animosity to which it has given birth, it must be confessed, that this collision of sentiment and contrariety

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of opinion, have been the means of eliciting a fund of useful information and much desultory knowledge.

Without meaning to take any side of the question as far as it regards persons, or entering into a justification of either party, it may be asserted with some degree of confidence, that on fair investigation, the truth will be found to lie between both extremes. Whoever attentively considers the mischief that often results from distension of the stomach and bowels overloaded with aliments, will, I am sure, be convinced of the utility and even necessity of sometimes administering an emetic in certain states of Apoplexy. Vomiting may be employed with great benefit and propriety where the attack is known to follow shortly after full eating; but in order to exhibit the remedy with the least possible risk, and at the same time with the greatest possible advantage, it should invariably be preceded by a free emission of blood; this precaution will obviate the apprehended danger of rupturing the vessels or increasing the Congestion by impelling the blood in too great quantity and with too much velocity to the head. It is however to be doubted, whether vomiting is attended with these consequences, notwithstanding the opinion is sanctioned by some of our best medical writers. That the jugular veins are somewhat compressed, and the returning blood momentarily retarded during the short period of ejection, must be acknowledged; yet, when it is considered that these effects last only for a moment, and how powerfully the lymphatics and lacteals of the primæ viæ are emulged during the operation, pouring back their contents into the duodenum and stomach, thereby cutting off all farther supply to the circulation, and consequently preventing as well as diminishing plethora; we shall not hesitate, in certain cases and under certain limitations, to avail ourselves of the advantages that are likely to accrue from the application of so powerful a remedy.

It often requires much accuracy of judgment and nicety of discrimination, joined to great experience, to be always able to distinguish those cases of Apoplexy in which general bleeding would be preferable to local. When the vigor of the constitution is impaired by a long course of intemperance, or the vital energy on the decline from arthritic affections and other diseases, the utmost circumspection is necessary in using the lancet. If however, on mature consideration of all the circumstances, general bleeding be deemed proper, it should at first be done sparingly, and as near the part affected as possible, viz, from the jugular

Ff 2 veins,

veins, which will speedily and effectually remove the Congestion. But as great debility and exhaustion often unexpectedly follow this operation, topical blood-letting should in general have the preference, as it may be carried to great extent without eventually injuring or weakening the system.

D. G——, Esq. a representative in parliament for one of the northern counties during the eventful period of Lord North's administration, was suddenly seized with an apoplectic fit at a friend's house. This gentleman was sixty years and upwards at the time, rather of a spare habit of body, and for many years of his life subject to gouty affections, but then apparently in good health. He dined at home as usual, and drank near a bottle of claret, his ordinary quantity when in health; walked out late in the evening, and shortly after his arrival was seized. When I saw him, which was about three hours from his being attacked, I found him labouring under every symptom that usually denotes compressed brain; a total abolition of sense and motion had taken place, with deep sleep, laborious and stertorous breathing, a redness and fulness of the face, suffused eyes, accompanied by a strong, full pulse. No case could be more strongly indicative of general bleeding; accordingly, a vein was opened, and ten ounces of blood taken away, the blood bounding in the most violent manner, as if an artery had been opened. I kept my finger on the pulse all the time, and the moment I perceived its vigor abate, the orifice was closed, well aware from his former habits, that he would not bear very copious evacuations, however the urgency of the case might seem to warrant them. But although my patient appeared at first somewhat relieved, yet the energy of the system began gradually to sink from that moment, and to my surprize and mortification, he expired in less than five hours after the bleeding.

I am apprehensive that no treatment, however judicious, would have availed much at the period in question. It may well be supposed that I was extremely anxious to inspect the state of the brain; but unfortunately his lady and friends would not consent to the examination; and I was obliged to rest satisfied with conjecture as to the precise seat and nature of the compression.

The Atonic or Asthenic Congestion, is generally formed by slow and imperceptible gradations, while the body labours probably under a debility from a defect of sensorial power; there is reason to suspect that it is commonly preceded

ceded by a species of chronic inflammation of the vessels of the brain, often subsisting for a length of time without exciting any material general tumult in the system, or apprehension in the mind of the patient: slight and wandering pains in different parts of the head of no long continuance, but constantly recurring and chiefly confined to the forehead and temples, sometimes attended with nausea and a contracted brow, mark the insidious approaches of the disease. By degrees other symptoms supervene, and the pains become more fixed, till at last they are concentrated as it were, in the inferior part of the os frontis, between or a little above the superciliary arches, with occasional shootings to the temples, and sometimes in the direction of the longitudinal sinus; the pulse now acquires some farther degree of acceleration, followed by irregular shiverings, giddiness, and all at once the patient tumbles down; he recovers however speedily, rubs his eyes, and is astonished how to account for the fall. This gives the first alarm, and if proper means be not adopted to subdue the complaint, the vessels yielding to repeated pressure and distension, lose their elasticity and contractile powers, are no longer able to propel the quantity of blood received, the accumulation which had been all along gradually forming arrives at its acmé, the congestion becomes complete, abolition of sense and motion follows, and the unfortunate patient, if not relieved, soon closes his career in death.

William Major, a marine belonging to the Plymouth divison, a young man between twenty-one and twenty-two years of age, was received into the Royal Hospital on January 11, 1803. He complained of wandering pains in different parts of the head, chiefly in the forehead and temples, pain about the scrob. cordis, dyspnœa, attended now and then with short irritating cough, but not frequent or troublesome; the pulse was neither hard, full, nor scarcely accelerated beyond the natural standard of health, nor was the tongue in the least degree discoloured; but there was a knitting or contraction of the eye-brows and muscles of the face, which at the time excited no particular attention, nor gave the slightest suspicion of the latent mischief which afterwards discovered itself so fatally; he had upon the whole, to an observer, so few and such slightly marked symptoms of disease, that I felt inclined to believe his complaints feigned; no uncommon occurrence among this description of people; and Mr. Magin, Surgeon to the Marine Infirmary, to whom he had applied some days before his admission, considered it in the same light

light. The man declared that he had been unwell many days, though he had done duty till the period of his applying to the Infirmary; he had been only discharged from the hospital about seven weeks, having laboured under acute rheumatism, for which it was found necessary to bleed him twice. His appearance now, was altogether the reverse of every thing like subsisting plethora or any tendency to inflammation, the body being thin and seemingly much emaciated, a sallow cadaverous countenance, the face covered with many deeply pitted variolous marks of a coppery hue, having more the resemblance of impressions resulting from the secondary symptoms of an highly aggravated syphilitic taint, the whole interspersed with livid coloured papulæ of a tubercular nature, abounding most on the cheeks and chin.

Such was the general outline of his state; but all this unfavourable apppearance was not in consequence of his present illness, his external condition was nearly the same when under my care before. He likewise complained of nausea and a disposition to diarrhœa; for this a scruple of pulv. ipec. was ordered, to be assisted in its operation by an infusion of flor cham. and two hours after the following mixture: ℞. Ac. am. ac. ℥iss. mist. camp. ℥4or. spt. æther. nitr. ʒiij. syr. pap. alb. ʒiij. M. sumat cochlear. iij quartis horis. On the 12th he felt better, but the following bolus was prescribed to cleanse the intestines, consisting of five grains of calomel and fifteen of rhubarb, and the mixture continued; the pulse regular, the tongue clean and moist; oppression about the præcordia, the cough troublesome. 13th. The general symptoms nearly the same as yesterday, except that he complained of pain in the inferior part of the os frontis, between and above the superciliary arches, to which a small blister was applied. 14th. The dyspnœa and cough more troublesome; a pectoral mixture ordered for the cough, and a blister to the scrob. cordis. On the 15th the affection of the head, which heretofore attracted little attention, now assumed a more threatening and alarming appearance; the vessels of the conjunctiva became turgid and inflamed, the light painful, the pulse accelerated, attended by thirst, anxiety, and darting pains through the forehead and temples. Several ounces of blood were immediately taken away from the arm, and leeches applied to the forehead and temples, which bled copiously. Four hours after these operations, the pains became violent about the temples and between the superior parts of the orbits; in a few minutes he became furious, which state lasted a quarter of an hour, and then suddenly lost the powers of

speech,

speech, which he never afterwards regained. From this period to the 18th, it was found impossible to convey either medicine or drink into the stomach. In the mean time, purgative enemas were injected, which evacuated the intestines freely; the head was shaved, blisters applied to the sutures, and leeches to the os frontis, above the orbits, as well as again to the temples. During the 16th and 17th, he had a kind of convulsive paroxysm or exacerbation every evening at six o'clock. On the 18th, at the same hour, he was seized with sickness, and vomited a large quantity of greenish bile, after which a profuse perspiration broke out all over the body, and continued for some hours with evident alleviation and remission of former symptoms; for, at this time, the powers of suspended intellect seemed in some measure restored; as he would take whatever was offered, whether medicine or drink, on being desired so to do; but he was totally unable to give utterance to sensation and perception.

After the bleedings and other evacuations, the vigour of the pulse and energy of the system sunk considerably, the adnata recovered its usual transparency, and from the previous state of general emaciation, these active curative means could not, it appeared to me, be pushed farther with any prospect of advantage, although I had not then a doubt respecting the nature of the disease. That the sensorium laboured under compression from Congestion, or effusion of blood or serum, was manifest; and had these evacuations taken place in the very commencement, there is reason to suppose they might have been successful: But the disease made its approaches so insidiously and covertly on a subject apparently so little predisposed to plethora or inflammation, that all suspicion respecting its real nature and tendency was lulled to rest; and when Compression became evident, I was inclined to impute it rather to an accumulation of aqueous fluid in the ventricles than to a preternatural distension of the vessels from red blood, although a principal characterizing symptom of Compression depending on serous effusion was wanting, viz. dilatation of the pupils. On the 19th, the circulation was so languid, with other indications of great exhaustion, that wine and cordial medicines were deemed necessary; but notwithstanding these and other means, he gradually sunk, the suffusion and muddy inflammation of the adnata returned, universal prostration of strength followed, and the patient expired on the night of the 22d. From the moment the powers of speech were suspended or rather annihilated, the iris lost the property of contracting and dilating; and neither the application

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of strong light, of objects drawn rapidly across the eyes, or even frictions on the cornea, made the smallest impression, whilst the orbicularis palpebrarum, the Levator palpebræ superioris, and muscles of the globe continued in full activity. There was much inclination to sleep, frequent startings, craunching or grinding of the teeth, constant moaning, and a tendency to strabismus, the axis of the left eye being directed towards the nose; but the pupils were not in the slightest degree dilated in any stage of the disease; there was likewise a paralysis of the whole left side, which was observed for the first time on the 16th. The blood drawn from the arm was one homogeneous mass, without any inflammatory marks of buffy gluten on the surface, although taken from a large orifice. It was discovered during the delirium, that he laboured under virulent gonorrhœa, of which the patient gave not the least previous intimation.

In reflecting on all the circumstances and symptoms attending this case with its fatal termination, I was extremely anxious to examine into the state of the brain, in order to ascertain precisely the seat of the disease; in some measure persuaded however, that death, if not solely owing to compression from an effusion of lymph or serum into the ventricles, it would at least be found a mixed case, that is, combined of congestion and effusion: I therefore requested Mr. Fuge, first Surgeon of the Hospital, to open and examine the contents of the cranium in my presence on the following day, which he very readily complied with, accompanied by his son, a very promising young gentleman and a good anatomist, who, to save his father the trouble, performed the operation with much neatness and science.

On making an horizontal section of the bones of the cranium, and removing the superior portion, to which the dura mater adhered very firmly, the vessels of the brain were found unusually and prodigiously distended with blood, the cerebrum and cerebellum exhibiting the most striking resemblance of a beautiful anatomical preparation, on which the greatest violence and utmost force of injection had been employed. When the dura mater was carefully detached, its internal surface appeared at first as if covered with coagulable lymph from inflammation; but on closer inspection, I considered it only a portion of the fine pellucid fluid condensed after death, which every where exudes from the surface of the pia mater. The minute vessels of the plexus choroides were likewise distended, and the torcular Herophili sinus was full of blood; but

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to my great astonishment the ventricles were wholly free from any compressing fluid, the fourth contained a small quantity, probably not more than what is usually found in these cavities when the brain is in a perfectly sound state. It now became manifest that the patient died apoplectic from congestion, or a preternatural accumulation of blood in the vessels of the sensorium, originally depending probably on loss of tone in these vessels.

A knowledge of the characteristic distinctions between universal and local inflammation, is of the greatest importance in the treatment of this and other diseases: By the former is understood general increased vascular tone combined with excess of irritability; by the latter, morbid derangement and excessive irritability in a particular and individual organ. The cure of the first, as already observed, is effected by general means only, while in the second, we are obliged to combine general with topical remedies, as the situation of the affected organ is more or less remote, that is, internal or external, and which in their application often require much penetration and practical knowledge in the physician. The unequal distribution of the circulation destroying the equilibrium, as in local inflammation, is often attended with lesion; and hence the necessity of an early and judicious treatment. The means of lessening local action, merits particular attention, as by its increase or diminution, a more uniform distribution of the sensorial power is effected. The debilitating applications, or means, must be proportioned to the excess of irritable action; if carried beyond this, there will be danger of injuring the organization and vital energy of the part.

It is exceedingly difficult to distinguish the gradation of symptom and nice shades of difference between the local Sthenic Congestion and the Atonic. The chronic state of inflammation is commonly superinduced by a long course of intemperance and low debauchery, as it is a disease frequent among a certain description of seamen and marines; indeed, my experience confines it principally to these classes of people; and the numbers that are affected with a slighter degree of it, is truly surprizing, often terminating in vertigo and incurable head-aches: It affects them more in winter than in summer, owing to the diminished action on the surface, and consequently a greater determination to the internal organs. It chiefly prevails among those constitutionally debilitated by inebriation, and who in their youth had been brought up to mechanic arts which compelled them to sedentary lives. It is also probable, that

that it is a frequent complaint in large manufacturing towns, where confinement, bad air, and poverty, predispose the system to such attacks.

From what has been observed above respecting the predisponent causes of this disease, it will be found the most hopeless of all the three species, when once arrived at that stage of it which produces Apoplexy. General bleeding, it is to be feared, would still farther depress the vis vitæ, without relieving the congestion; topical blood-letting only must then be employed, and it will be necessary probably to observe some limitations even to this: Blisters are to be applied to the sutures, rubefacients to different parts of the head, stimulating salts to the nose, the extremities immersed in hot water, and every other means that can be devised to rouse the energy of the brain, and restore the elasticity of its vessels, already weakened if not destroyed by distension. When from previous symptoms, and before congestion is completely formed, the nature of the malady is foreseen, the application of the whole or a part of the above means, will in all probability be sufficient to ward off the impending evil; but to these must afterwards be conjoined the judicious internal use of those stimuli which are known to possess powers to excite the action of the nervous system, and give tone to the lax fibre. This species of Apoplexy often makes a near approach and has characters similar to Paralysis, and is sometimes accompanied by Hemiplegia. I have had under my care, at different times, a strange variety of these kind of complaints, which would be extremely difficult to reduce to nosological order and system, or to describe even their anomalous symptoms with any degree of accuracy and precision.

There are three points which should be impressed as essential to the successful treatment of general and local Sthenic Congestion. 1st. When general bleeding is to be employed, to make choice on every occasion of the jugular veins for the operation. 2d. During that operation, to make compression as far as it may be possible on the carotid arteries, to obstruct or retard the circulation to the brain; I have many times relieved head-ach, fulness and giddiness, to which I have been myself subject, by compressing these arteries with my fingers. And, lastly, never to omit the application of cold frequently renewed to the head.

I venture to offer these facts and observations to the public with great diffidence; but if what is here advanced, with as much brevity as the importance of the subject would

would admit, has thrown any additional light on the nature and treatment of Apoplexy, or should have the effect of reconciling and conciliating the contradictory sentiments and differences of others, by pursuing a middle course, it will have fully answered its intended purpose; and should it even fail in these respects, it may at least tend to stir up a spirit of research in others, better qualified, from possessing a greater fund of facts, and greater powers of intellect, to elucidate a point in which so many inconsistent and opposite opinions have been lately given in the Medical and Physical Journal.

March 9, 1803.

To the Editors of the Medical and Physical Journal.

Gentlemen,

I Flatter myself the request I am about to make to your Correspondents will not be thought unreasonable, especially if they will have the goodness to refer to Vol. vii. p. 192, of the Med. and Phys. Journal.

The favour I beg is, that they will be kind enough to suspend their opinions and remarks on my Papers on the Modus Operandi of Opium, until the whole of the evidence shall be laid before them.

Having proved that opium does *not* operate as a stimulant, which was what I first proposed (see Med. and Phys. Journal, Vol. vii. p. 128), I propose, 2dly, to prove, that it operates directly as a sedative; and, 3dly, to point out the practical advantages which this theory suggests. And after I shall have delivered my sentiments on these points, my first wish will be, that my observations and opinions may undergo a full and impartial scrutiny; and when this period arrives, it would give me pleasure to find they have attracted the attention of such of your readers as have employed a portion of their leisure time *in examining and comparing the experiments of different authors*, particularly those of Alston, Whytt, Monro, Johnstone, Alexander, and Wilson; the *study* of these authors being, in my humble opinion, a preliminary and necessary step, to enable any one to entertain just and proper notions of the properties and effects of the medicine.

They will doubtless see the necessity of entirely divesting

ing themselves of every inclination in favour of ideas already imbibed; and, (instead of condemning my remarks indiscriminately, as two of your correspondents have done)* of pointing out *in what instances and respects* my theory is inconsistent with facts and experiments, my proofs are deficient, and my conclusions erroneous.

On a subject which has eluded the researches of so many men of first rate talents, there is reason to fear, many such instances will occur, but which may possibly admit of farther elucidation; and I shall, at all times, be happy to give every explanation in my power, but shall not consider myself bound to answer anonymous communications.

Some doubts having been expressed of the competency of Dr. Cullen's definitions, which I have hitherto taken as a guide, a necessity arises which obliges me to swerve from the proposed arrangement, until this question shall have been discussed.

You have very properly remarked, that no disputed point can be adjusted, while the disputants are employed on different subjects, or while the matter in question is not acknowledged by both parties to be the same.† You also doubt, (and your opinion will certainly have great weight) whether any advocates for the stimulant doctrine would admit of Dr. Cullen's definition of stimulants; but I persuade myself you will agree with me, that before it can be rejected, its insufficiency, and *inconsistency with the phenomena of muscular motion,* ought to be shewn, which has not yet been done; nor, (if mobility implies muscular action, and if to increase that be, as I imagine it is, a property essential to a stimulant) am I aware that it can be done.

Not that I think either this or Dr. Cullen's definition of sedatives, possessed of every attainable perfection; nor am I so invincibly attached to them as to object to their being changed, provided the conditions specified above (the reasonableness

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* Med. and Phys. Journal, Vol. viii. p. 505. Vol. ix. p. 153—157.

† My own opinion is, that the question now at issue might have been decided long ago, had accurate definitions of the terms stimulants and sedatives been formed, *(and strictly adhered to in every dispute on the subject)* agreeably to such conclusions as are fairly deducible from the experiments of the three first authors quoted above; at all events, there can be no difficulty whatever in deciding it now that this branch of knowledge has been so much extended by the publication of many ingenious and accurate experiments.

sonableness of which is evident) are complied with. The latter, however, is more accurate and comprehensive than that of any author I am acquainted with; in as much as besides specifying the change produced in the system, it also informs us in what that change is supposed to consist, which is an essential circumstance.

But whether they are retained or given up, is, in my opinion, immaterial; only let their place be supplied by such as are accurate, and I shall be satisfied.

Were I indeed to refuse to submit to such regulations as are best adapted for the attainment of truth, either my motives or the equity of my cause might be justly suspected. And were I to succeed in endeavouring to suppress any evidence which might place the subject in a clearer point of view, my object would be defeated, which is, a clear and *final* decision of the question, founded upon just reasoning, accurate experiments, and established facts.

Another cause of my indifference as to what definitions it may be thought proper to adopt, is, a firm conviction of the impossibility of framing a just and accurate definition of the term stimulants, which will not exclude opium and alcohol from the list, or of sedatives, which *will* exclude them.

Undoubtedly, a definition might easily be formed so as apparently to include a particular substance, or even a class of substances, and which might appear *upon a cursory view* to be correct, on account of its adverting to some accidental or *secondary* change, frequently observed to result from their exhibition; but which, *on a close inspection*, would be found so exceedingly defective, as even to *exclude* that very substance, or class of substances, with a view to which it was composed.*

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* For instance, bleeding, both general and topical, uniformly operates as a sedative; and yet it frequently produces an *exhilarating effect*, and almost immediately increases the motions and powers of motions in many of the muscles of the body, which were before incapable of being moved; as, e. g. when it removes an acute pain in the side, or a spasmodic affection of the biliary ducts, intestines, &c. Now if opium be deemed a stimulant, because it frequently produces the effects just mentioned, bleeding might with equal propriety be deemed a stimulant; and so might any article in the materia medica, *when its operation is salutary*. But it may perhaps be said, bleeding does not *always* exhilarate, and seldom, if ever, produces this effect in health; nor does either opium or alcohol *always* exhilarate, and much seldomer have this effect *in health*, (considered independently of company,

Of this description, if I understood it aright, is Dr. Brown's definition of stimulants;* but what will certainly appear extraordinary, if not ridiculous, is, that it absolutely *excludes* those very substances from the class of stimulants, which he has placed *at the head of this class;* as I shall endeavour to demonstrate.

" Stimuli (says Dr. Brown, Elem. of Med. Vol. i. p. 6.) are either universal or local.

" The universal stimuli are the exciting powers, so acting upon the excitability, as *always* to produce some excitement *over the whole system.* And their appellation of universal is convenient, to distinguish them from the local.

" The local stimuli act only on the part to which they are applied; and do not, without previously producing an affection in it, affect the rest of the body."

Supposing these definitions to be correct, the doctrine inculcated in the following extract, is, in the highest degree, incorrect.

" Spirituous or vinous drink, in which the alcohol is always diluted, stimulates more quickly, and more readily, than seasoned food, and its stimulus is in proportion to the quantity of alcohol that it contains.

" But there are stimuli, which possess an operation as much quicker, and more powerful,† than these just now mentioned, and which are the agreeable and *proper ones* in health, as their operation is of shorter duration. To these the name of diffusible is to be given. They rank above *strong drink* in the following order:

Next to strong drink, and immediately above it, *stands* musk; above it, volatile alkali; higher than this, æther; and the highest of all, as far as experiments have yet reflected light upon the subject, is opium." (Brown's Elem. Vol. i. p. 103—4).

Unfortunately however for the Brunonian theory, instead of these articles *always* producing some excitement over

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company, conversation, &c. *which are in themselves highly exhilarating)* than is commonly imagined; and even when these are joined, it is not uncommon to hear persons *not debilitated by intemperance,* complain, that *wine,* as well as spirits, generally induce dulness and languor, especially after taking food; and that they are *stronger* as well as more alert, when they abstain than when they indulge in their use.

* I do not mean to say that it was composed with a view to suit a particular class of substances.

† " Than that of the articles of diet."

over the whole system, they NEVER have this effect;* at least I have not met with any experiment (and I have examined a great number) where this appeared to be the fact. On the contrary, I find they *always* produce *a diminution of the excitement in the fibres and vessels of the part to which they are applied,* (whenever it is so situated as to admit of inspection:) *and if the whole system does become affected in consequence of their application,* THE EXCITEMENT IS ALWAYS UNIVERSALLY DIMINISHED.

Can a stronger proof of the fallacy and imbecility of the Brunonian System be required?

The experiments from which my information has been chiefly derived are those of Drs. Alston, Whytt, Monro, Bard, Fontana, Johnstone, Alexander, Wilson, and Crumpe.†

Particular proofs will of course be required in support of my assertions; and these shall be as numerous as my opponents could wish, or, at any rate, more so than they could reasonably expect.‡

I shall begin with such experiments as had been published long before Dr. Brown's opinions were made public; and which are more than sufficient, one would have imagined, to have prevented such unwarranted assertions from being made; or at least, from gaining assent.

Dr. Alston's experiments with opium on frogs, stand in direct opposition to Dr. Brown's assertions; and they are the more satisfactory, as they were frequently repeated, and always with the same appearances and event.

So far is Dr. A. from making use of any expression which could justify the supposition of its producing some excitement

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* Musk is here excepted, as I do not know that any experiments have been made to ascertain its mod. op.

† To which may be added two experiments I made with opium applied externally, and which afford a strong confirmation of the *directly sedative properties* of opium. See Med. and Phys. Journal, Vol. VII. p. 135—7, and 355—8.

‡ Though, indeed, the onus probandi seems to rest with them, their leader having made a string of assertions, which at present stand unsupported by proofs; it is therefore incumbent upon them to supply the deficiency, and to prove, *by clear and decisive experiments,* that alcohol, volatile alkali, æther, and opium, *always* produce some excitement *over the whole system.* If they fail in this respect, they must of necessity either abandon the Brunonian definition of stimulants, or the doctrine founded upon it.

This appears to be the most regular mode of proceeding; but, probably, the informality will be excused, and it may be the means of saving time, if I proceed immediately with my proofs.

excitement *over the whole system,* that he expressly says, that Mr. Fullarton and himself *very distinctly saw,* (in the frog's foot) A SURPRIZING DIMINUTION OF THE BLOOD'S VELOCITY; *for,* says he, *it did not move half so swiftly as it uses to do in these creatures.* We alternately looked at it *again and again, and in less than half an hour saw the velocity of the blood* GRADUALLY INCREASE; *the uneasy frog* RECOVER ITS WONTED VIGOUR, AND THE BLOOD ITS COMMON CELERITY; upon which we took out the paddock, put it in a bason of clean water, and allowed it half an hour to refresh itself; then gave it another dose of opium, fixed it to the microscope *with all expedition,* and viewed it as before; *the blood then moved yet slower than it did the first time,* AND ITS VELOCITY GRADUALLY DECREASING, *at length it stagnated, first in the smaller, then in the larger vessels, and in about a quarter of an hour the animal expired.**

Nor is it possible to conceive experiments could be more hostile than those of Drs. Whytt and Monro are to the opinions of Dr. Brown; and their remarks and inferences, which are in general consistent, clear, and instructive, are equally so. Not that either Dr. W. or Dr. M. appears to have had any particular theory in view; but have merely given the result of their experiments, with such observations and conclusions as they suggested.†

The same remarks are applicable to Dr. Bard's Dissert. de Viribus Opii, published in 1767. His intention however seems to have been, to prove that opium acts as a sedative; but this does not invalidate his *facts,* or render his Thesis, (which is written with great candour,) less deserving of attention.

I could with great pleasure make many extracts from each of these works, which would greatly strengthen my arguments, but not without anticipating the evidence which will be brought forward, with more propriety, when I come to consider the second proposition, stated at the beginning of this letter.‡

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* Ed. Med. Ess. Vol. v. part 1, p. 153—6. See also Med. and Phys. Journ. Vol. VII. p. 359—360.

† The experiments of Dr. Monro are not confined to opium, but also include alcohol and camphire. I shall take this opportunity just to intimate a wish, that he had avoided stiling camphire an essential oil, as its medicinal properties are, in many respects, so *opposite* to those of essential oils, strictly so called.

‡ Some of Dr. Monro's experiments, and one of Dr. Whytt's, have been already quoted. See Med. and Phys. Journ. Vol. VII. p. 342—344—350—354. Vol. VIII. p. 343—5.

But I cannot refrain from copying a few of Dr. Whytt's *general conclusions.*

"From the preceding experiments, (says Dr. Whytt) we may, I think, fairly draw the following conclusions.

"Opium applied to the stomach, guts, cavity of the abdomen, thorax, and abdominal muscles, *soon lessens,* and after some time *entirely destroys* ALL FEELING AND POWER OF MOTION, NOT ONLY IN THE PARTS TO WHICH IT IS APPLIED BUT THROUGH THE WHOLE BODY.

"It remains, therefore, that opium, by affecting the extremities of the nerves of the parts to which it is applied, does, by means of their connexion and sympathy with the brain and spinal marrow, *destroy or prevent,* THROUGH THE WHOLE NERVOUS SYSTEM, THE OPERATION OF THAT POWER UPON WHICH DEPENDS SENSATION AND MOTION IN THE BODIES OF ANIMALS.*

"Opium *does not only destroy the moving power of the muscles of animals,* by intercepting the influence of the brain and spinal marrow, *but also by unfitting the muscular fibres themselves, or the nervous powers lodged in them, for performing its office;* otherwise a solution of opium, when applied to the abdominal muscles or viscera of a frog, would not put a stop to the heart's motion sooner, or indeed so soon, as decollation and the destruction of the spinal marrow. (No. 4 and 5 compared with No. 8 and 10.) Opium therefore does not produce its effects, *solely,* by putting a stop to the function of the brain and spinal marrow, *but its influence reaches to the fibres of the muscles themselves, or to the extremities of the nervous filaments which terminate in them.*

"When I say the influence of opium reaches to the nervous filaments which terminate in the muscular fibres, it is not meant, that any effluvia or subtle parts of the opium are transmitted to them ('see *n* and *o* above') but that it destroys their powers, by means of that sympathy which they have, through the brain or spinal marrow, with the nerves to which the opium is immediately applied.

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* Dr. Wilson, in his Essay on Opium, p. 12, makes the following striking remark on this passage:—"I cannot, however, conclude my observations on this subject, derived from the labours of Dr. Whytt, without quoting from his paper the following passage, which, as far as I can judge, *either from my own experiments, or from those of others, contains one of the justest, and, at the same time, one of the most important observations concerning the action of opium on living animals, I have any where met with.*"

"In animals which have got a large dose of opium, the veins, especially those of the membranes of the brain, are observed to be much swelled; whence it has been thought, that opium produces its effects in the bodies of animals, partly, at least, by rarefying the blood and compressing the brain; *but this distension of the veins seems to be no more than a consequence of the very slow motion of the blood through the heart, on account of the insensibility with which this organ is affected.**

"Since opium soon puts a stop to the vital motions of animals, which yet continue in time of sleep with little or no diminution of their vigour; since it often eases pain without bringing on sleep; and since, by its topical action on the heart, it destroys the motion of this organ after all communication between it and the origin of the nerves is cut off; it follows, that the effects of opium are not owing, as some have thought, to its producing sleep; *on the contrary, the sleep which it occasions, seems to be only a consequence of its impairing the sensibility of the whole nervous system.*

"The other effects of opium may be also deduced from the same cause, *particularly its restraining all evacuations that are owing to an usual irritation of the parts of the body, and at the same time promoting those natural secretions which have been diminished or stopt by spasmodic strictures of the vessels, from some uncommon* STIMULUS *affecting them.*"

"Lastly, does not opium kill animals *by rendering their several organs wholly* INSENSIBLE OF THE STIMULI, WHICH ARE DESTINED BY NATURE TO EXCITE THEM INTO ACTION; *whence, not only a stop is put to the peristaltic motion of the guts, and to the propulsion of the chyle,† but the fluids also begin to stagnate, first in the smaller and afterwards in the larger vessels;‡ while the heart becoming* GRADUALLY

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* "In frogs into whose stomach and guts I had injected a solution of opium, I not only found the heart's auricle, but also the great veins leading to it, much distended with blood." Vid. Essay on Vital Motions, &c. p. 371—2.

† Here Dr. Whytt quotes the well known experiment of Dr. K. Boerhaave, which has been already inserted in the Med. and Phys. Journal, Vol. VII. p. 498.

‡ "This my worthy colleague, Dr. Alston, observed with a microscope in frogs into whose stomach he had conveyed a few drops of a solution of opium in water. Vid. Med. Ess. Vol. v. part 1, art. 12. And indeed the great distension of the heart and its auricle in frogs killed with opium (No. 5, compared

GRADUALLY *less sensible of the stimulus of the blood with which it is distended, contracts more feebly and at greater intervals, till at last it ceases from motion altogether."* Ess. and Obs. P. and L. vol. ii. p. 301, 302, 309, 310, 313—316.

Let any impartial man peruse the experiments from which these conclusions, and many others equally decisive, are drawn, and also the experiments and remarks of Drs. Alston, Monro, and Bard; and then ask himself, whether Dr. Brown was justifiable in asserting, that opium, *as far as experiments have yet reflected light upon the subject*, can be said to occupy the highest place, *(or any place at all)* in the class of stimulants? If it be possible for him to entertain a doubt, let him then peruse the experiments, &c. of Fontana, but particularly those of Drs. Johnstone, Alexander, and Wilson; (he may also peruse the experiments and arguments of Dr. Crumpe, with my comments upon them,) and it would in my opinion be a great reflection upon his understanding, to suppose that he could still think the opinions of Dr. Brown, on this subject, tenable.

That assertions so destitute of proofs should have gained credit almost universally, would be scarcely credible, were not the fact well known; nor does it afford a strong proof of the sagacity of his approving cotemporaries.

Was it not incumbent upon Dr. Brown to have proved, that the experiments of Dr. Whytt, &c. were false, or that their conclusions were unwarranted by their experiments, before he had ventured to bring forward assertions in direct opposition to them? This was, I think, the least that could have been expected.

The experiments of the five remaining authors quoted above, have been published since Dr. Brown's Elements of Medicine; but though the evidence they afford of the *directly sedative properties* of alcohol, volatile alkali, æther, and opium, is as positive and decisive as could be wished or even imagined, yet the number of converts to the Bruno-

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compared with No. 3, 6, and 10 above) indicates a more than ordinary resistance to the blood's motion in the arteries, as well as a less degree of irritability in the heart. Further, is not the slow, full pulse, and dry parched mouth, in those who have got an over-dose of opium, owing, *partly to the slower motion of the fluids in the small arteries and secretory vessels of the glands?* Though it must be confessed, that the dryness of the mouth may be in some measure owing to the perspiration being greatly increased by the opium."

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nian system seems to have increased, and to be increasing, in a manner truly alarming and unaccountable; and I fear I have no great reason to flatter myself that my endeavours to stem the torrent will be crowned with success; but I will do my utmost, in hopes that truth, on which ever side it may prove to be, may ultimately prevail.

I have already had occasion to make extracts from the experiments of each of these authors excepting Dr. Johnstone's,* (particularly from those of Dr. Crumpe,†) and these I consider as so many indisputable proofs in support of my arguments, but not more strong than many others which still remain to be considered, though some are more comprehensive than others, and demonstrate more clearly the directly sedative properties of the articles which Dr. Brown has placed at the head of the class of stimulants,) but which, for the reasons already alledged, I shall decline bringing forward at present. But that I may at the same time fulfil the promise made to the advocates of the stimulant doctrine, I shall refer them to the experiments of *all* the different authors mentioned above, which I have already said I consider as so many undeniable proofs in my favour; from which they are at liberty to select such as they may deem best adapted to prove, that opium, alcohol, &c. *always produce some excitement over the whole system.*

Not that I wish to limit them even to these, or to prescribe any boundary, provided such experiments as are of a doubtful nature, or which the experiments of other writers have shewn to be inaccurate, are avoided. And yet, with all these advantages, I will venture to say, they will not find it an easy matter to produce *one* such instance.

I shall conclude with a few general Observations on the term Stimulants.

I have often been surprised, that a term so plain, precise, and definite in its signification, should have been so strangely perverted from its true meaning, as to have been applied indiscriminately to substances whose nature and mode of operating are totally dissimilar; as much so as those of astringents and cathartics, acids and alkalis, fire and water, &c. &c. Whatever may have been the original source of the error, it has been the means of introducing great

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* Vid. Med. and Phys. Journal, Vol. VII. p. 344—6. 351—2. Vol. IX. p. 45—53.

† Idem. No. 36, 38, 40, 44, 45, 47.

great confusion into the theory and practice of medicine; insomuch, that, at present, no phrase can be more vague and indefinite in its meaning, than that of "a stimulant plan of treatment."

Instead of this phrase being confined, as I think it ought to be, to such things as *increase the contractility,* tone, and vigour of the muscular fibres of the body;*† it seems, in the common acceptation of the phrase, to signify, the frequent exhibition, *in large doses,* of such medicines as *always immediately diminish or destroy the action or contractility of the muscular fibres of the part to which they are applied;*‡ and if they are applied to parts endowed with involuntary motion (in some animals and under certain circumstances hereafter to be noticed) such as the stomach, the intestines, the heart, or large blood vessels, (the nervous system being entire) *all the muscles of the body are found, when examined immediately after death, to be totally insensible to every kind and degree of stimulus.* Now, if this be their mode of operating, and that it is, experiments abundantly prove, it is as absurd to stile them stimulants, as it would be to call astringents cathartics, alkalis acids, or black white. And yet, strange as it must appear, several writers of eminence have fallen into this mistake.|| And what adds to this apparent inconsistency is,

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* I am much pleased with Dr. Alexander's substitution of the word contractility for irritability.

"Per contractilitatem, eam dotem intelligi volo, quæ irritabilitas nominatur, ab Hallero aliisque fibra musculari insitam esse; a Whytt, Monro, et iis quibus nervorum doctrina maxime arridet, a nervis in fibram muscularem diductam, existimatam. Verbum contractilitas mihi præ aliis placuit, quia pericula fere semper in fibras musculares instituta sunt. Terminus est etiam qui vim earum contrahendi magis accurate exprimit quam irritabilitas, quippe quæ latiorem significationem habet, et, juxta quorundam sententiam, proprietas est toti corpori vivo communis, vel, ut aliis verbis utamur, vitæ fons et origo est." Vid. Dissert. p. 113.

† Such as decoctions or infusions of bark, with cinnamon or other aromatics; of orange peel with gentian or cinnamon; preparations of myrrh, steel, and guaiacum; moderate quantities of animal food, with spices, mustard or horse radish; and small quantities of wine; together with country air, and moderate exercise on horseback; bathing; frictions either dry or medicated; cheerful company, conversation, &c. &c.

‡ Namely, alcohol, volatile alkali, æther and opium, to which may be added camphire, which seems, from the experiments of Dr. Monro, and the remarks of Dr. Cullen, to operate upon the same general principles.

|| Vid. Brown's Elements of Medicine, Darwin's Zoonomia, Alexander's Dissertation on Opium, Beddoes's Hygeia, &c. &c.

is, that one of them (Dr. Darwin) seems (if we may judge from his definition of *incitantia,* and of the term *stimulus,* as

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In support of what has been advanced, I shall take the liberty of copying the inferences which Dr. Alexander draws from his experiments:

"Conclusio."

"Partibus corporis, in quas opium actionem suam exercet, pro virili indagatis, ea quæ ab experimentis nostris rite deducenda, ad argumentum nostrum immediate pertinent, repetere haud abs re fore judico.

"1mo. Opium fibræ musculari admotum contractilitatem ejus nunquam non consumit. Vid. Exp. 1, 4, 7, 8, 11, 12, 14, &c.

"2do. Spiritus vini, *et alii stimuli valentiores,* eosdem effectus præstant. Vid. Exp. 2, 5, 9, &c.

"3tio. Opium, eadem qua animal, admotum, contractilitatem fibræ temperatura inferiore, citius, consumit. Compara Exp. 4, cum 11, 12.

"4to. Opium applicatum cordibus animalium, quæ motus voluntarii facultatem et vitam, brevi tempore post thoracem apertum, amittunt, quamvis contractilitas in systemate pene integra restet, vim tamen contractilem musculi totius, cujus pars actioni ejus subdita fuerat, solum consumit, dum reliquæ corporis partes, ut antea, contractilitatem suam conservant. Vid. Exp. 14, a et b.

"5to. Effectus opii, admoti cordibus animalium quæ corde privata, per tempus aliquod vivunt, et motus voluntarios efficere perstant, per totum corpus dispertiuntur. Vid. Appendix B. Exp. 1, 2.

"6to. Opium in ventriculum, vel sub cute, eosdem fere edit effectus ac in cor injectum, scilicet, mortem infert, contractilitatem delet. Vid. Exp. 20, 21, 47, 48, &c. &c.

"Sed hoc notatu dignum est,

"7mo. Quando sat opii ad animal intermiendum musculis voluntariis admovetur, musculi involuntarii contractilitatem suam adhuc conservant. Vid. Exp. 47, 48, 52, 59, &c. &c.

"8vo. Musculis involuntariis adhibitum, non modo eorum, sed etiam musculorum voluntariorum, contractilitatem abolet. Vid. Appendix D. Exp. 1, 2.

"9no. Opium partes corporis longe remotas non ideo afficit, quod musculi inter se nectuntur, nec quod contractilitas, natura, indivisa est. Vid. Exp. 42, 43.

"10mo. Nullum talem fluidorum conditionis mutationem infert, qualis ad mortem partium remotarum inducendam, vel ad contractilitatem harum perdendam, valeret. Vid. Exp. 15, 16.

"11mo. Opium corpori applicatum ea quantitate resorberi posse, quæ animal enecaret, minime constat. Vid. Exp. 47, 48, 52, 59, &c. &c.

"12mo. Et res haud ita se habeat necesse, quia opium eandem conditionem absorbentium, ac cæterarum partium musculis instructarum, movere videtur. Vid. Exp. 51.

"13tio. Vim suam in cerebrum et nervos exhibet. Vid. Exp. 29, 30, 31, &c.

"14to. Nexu inter nervos intercluso, effectus ejus haud palam fiunt ultra fines nervorum istius partis, cui immediate admovetur. Vid. Exp. 42, 43, 44.

"15to. Systemate nervoso incolumi, omnes corporis partes sub imperio nervorum afficit. Vid. Exp. 35, 36, 38, 39.

"16to. Quamobrem nervis debemus, quod opium effectus suos longe lateque diffundit, Alex. de Opio, p. 108—111."

as well as of the different terms employed in those definitions, and the observations connected with them) to consider *contraction in the muscular fibres as the immediate and necessary consequence* of the application of stimulants.

Dr. Darwin's definitions, above alluded to, are as follow:

" Those things, which *increase the exertions* of all the irritative motions, are termed incitantia." Zoon. vol. ii. p. 678.

" By the word stimulus is not only meant the application of external bodies to our organs of sense and muscular fibres, which *excites into action the sensorial power termed irritation;* but also pleasure or pain, when they *excite into action* the sensorial power termed sensation; and desire or aversion, when they *excite into action the power of volition*; and, lastly, the *fibrous contractions,* which precede association; as is further explained in Sect. 12. 2. 1."

" A certain quantity of stimulus produces irritation, which is *an exertion of the spirit of animation exciting the fibres into contraction.*

" There are three circumstances to be attended to in the production of animal motions. 1st. The stimulus. 2d. The sensorial power. 3d. *The contractile fibre.* — 1st. A stimulus, external to the organ, originally induces into action the sensorial faculty termed irritation; *this produces the contraction of the fibres,* which, if it be perceived at all, introduces pleasure or pain; which in their active state are termed sensation; which is another sensorial faculty, *and occasionally produces contraction of the fibres;* this pleasure or pain is therefore to be considered as another stimulus, which may either act alone or in conjunction with the former faculty of the sensorium termed irritation. This new stimulus of pleasure or pain either induces into action the sensorial faculty termed sensation, *which then produces the contraction of the fibres;* or it introduces desire or aversion, which excite into action another sensorial faculty termed volition, and may therefore be considered as another stimulus, which either alone, or in conjunction with one or both of the two former faculties of the sensorium, *produces the contraction of animal fibres.* There is another sensorial power, that of association, which perpetually, in conjunction with one or more of the above, and frequently singly, *produces the contraction of animal fibres,* and which is itself excited into action by *the previous motions of contracting fibres, &c. &c.*" Zoon. vol. i. p. 13, 30, 73, 74, &c.

Upon the whole, if the above observations are just, the obvious inference is, that an improved definition of stimulants might and ought to be formed in perfect conformity thereto, to be strictly adhered to on all occasions, and to the exclusion of every other.

Some such plan as this can alone, I conceive, by bringing us back to just principles, remove the confusion and uncertainty which at present prevail.

What would be thought of the following?

Stimulants are such substances, or powers, as *increase* the contractility of the muscular fibres locally or universally.

Sedatives are such substances, or powers, as *diminish* the contractility of the muscular fibres, locally or universally.

I am aware that the first of these definitions would exclude alcohol, volatile alkali, æther, opium, camphire, and several other medicines, at present considered as stimulants, from the list; and for that reason, that it will not be perfectly agreeable to *all* parties. But if this be the only, or the *principal* objection that can be urged against it, it ought not, and I trust will not, prevent either this, or some other more perfect definition from being adopted; this being an affair of too much moment to allow private or partial considerations to have any weight in the decision.

I am, &c.

Manchester, March 9, 1803. M. WARD.

P. S. The request with which the above letter commences, precludes me from replying to Mr. Hill's communication, inserted in No. XLVIII. I shall therefore only observe, that my sole view in selecting the Quotation to which Mr. H. alludes, was merely to sanction *the publication of the facts* which had occurred to me, and that my choice (indeed it was suggested to me by a friend for whom I entertain the highest esteem) was not at all directed by any opinion I had formed of the modus operandi of opium, (for I confess I had not then paid sufficient attention to the subject, to enable me to make up my mind upon it) much less of its manner of operating in the disease treated of by Mr. Pott.——It will not, I hope, be deemed inconsistent with the tenor of my request, to desire Mr. Hill will have the goodness to point out, through the medium of the Medical Journal, in which of my Papers I have spoken of opium as a *tonic stimulant*, or have attributed *opposite* qualities to it.

Observations *on the* Urine; *communicated by* Mr. Bostock, *of Liverpool.*

It has been remarked by one of the French chemists, that no substance has given rise to a greater variety of experiments, or been productive of more important discoveries, than the urine. The number of the ingredients which enter into its composition, the singularity of its products, the complicated nature of the spontaneous changes which it undergoes, and the varieties to which it is subject, as connected with the state of the living system, have long caused this fluid to be an object of great attention both to the chemist and the physician. But to the same circumstances which have rendered it the object of so much attention, must in part be ascribed the imperfect and confused ideas which were so long entertained respecting its nature and composition; even in the present day, the most accurate chemists are not entirely agreed in their accounts of its constituents, or of the changes which are effected by their spontaneous action upon each other. Several very interesting particulars respecting the nature and composition of the urine were discovered by the celebrated Scheele; and since his time, Fourcroy has applied himself with extraordinary assiduity to the examination of this fluid. See Ann. de Chimie, t. 31. An elaborate account of it has been published by this author in his recent work, entitled Systeme des Connoissances Chimiques. A valuable Treatise on this subject has also appeared from the pen of Mr. Cruickshanks;* it is rendered peculiarly useful to the experimenter, from a correct account of the different re-agents, by means of which the varieties that take place in the nature and quantity of its impregnations may be easily detected. It will however be found, upon comparison, that the analyses of Fourcroy and Cruickshanks do not in every particular coincide; and it seemed of some importance that these differences should be accurately detailed, in order that they may be decided by future experiments. The well established facts are arranged in a method, which appears clear and perspicuous; and those parts of the subject are pointed out, which seem to require the aid of further experiment, in order to their complete investigation.

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* Rollo on Diabetes, and Thomson's Fourcroy, vol. iii. p. 315.

The urine may be considered under the five following heads. 1st. Its state immediately after being voided by the bladder, when it proceeds from a healthy subject, and before it has undergone any alteration. 2d. Its state after its component parts have undergone a change, but before the putrefactive fermentation has taken place. 3d. Its state after it has become putrid. 4th. The substances which are occasionally found in it, when there is no disease in the system, but which are not essential to its existence as urine. 5th. Its state when the system is affected by disease.

Sect. 1. The state of the urine immediately after being voided from the bladder.

According to Fourcroy, recent, healthy urine contains the following substances held in solution. 1st. A peculiar matter, upon which most of the distinguishing properties of the urine depend, called by Fourcroy and Vauquelin, who first distinctly ascertained its nature, Urée. 2d. Gelatine; the existence of the gelatine in urine was first discovered by Seguin, in consequence of the addition of the tanning principle. 3d. Muriat of soda. 4th. Muriat of ammoniac; this exists in but small quantity, and is so intimately united to the urée, that it is almost impossible entirely to separate them. 5th. Phosphat of soda; this was for a long time confounded with the phosphat of ammoniac. 6th. Phosphat of ammoniac; this is the salt to which the greatest attention has always been paid by chemists, as it is that from which phosphorus is obtained in the usual processes; it is always joined to the phosphat of soda, and there appears to be a ternary compound formed by their union; this compound has obtained the name of microcosmic salt. 7th. An acidulous phosphat of lime; phosphat of lime is insoluble in water, but when added to an excess of acid, as it exists in the urine, it becomes soluble. 8th. Phosphat of magnesia; this salt is only found pure in urine which is perfectly recent; it afterwards becomes united with ammoniac, and forms with it a triple salt. 9th. The phosphoric acid in excess, which gives solubility to the phosphat of lime, and causes recent urine to possess acid qualities. 10th and 11th. Small quantities of uncombined lithic, or, as it is now called, uric acid, and also of the benzoic acid; Scheele first detected the presence of these two substances in the urine.

Fourcroy describes at considerable length the nature and properties of the urée. If the urine be gently evaporated to the consistence of a thick syrup and then cooled,

cooled, a mass will be formed which consists of all the solid contents of the urine. The urée is found to be by far the most considerable of these, composing in some instances nineteen parts out of twenty of the weight of the mass. It is soluble in about four times its weight of alcohol; and if the alcohol be driven off by distillation, the urée will be procured nearly pure; a small quantity of muriat of ammoniac and of Benzoic acid alone will be left adhering to it: these are the only salts of the urine upon which alcohol has any action. If the urée be distilled, and the products be received in the pneumatic apparatus, we shall find it to consist of azote, hydrogen, carbon, and oxygen; of these, the azote is in the largest proportion. A watery solution of pure urée may be kept for some time without any change taking place in it; but if an animal substance be added, decomposition commences in a few days, and there is a formation of the carbonic and acetous acids and of ammoniac: this decomposition in the urine is effected by the presence of the gelatine. If a solution of the urée in water be distilled, and more water be continually added to the residue, it is converted almost entirely into the carbonat of ammoniac: it is the only animal substance which is decomposed at the temperature of boiling water. If diluted nitric acid be digested upon a thick watery solution of urée, a large quantity of lamellated crystalline matter will be produced, which Fourcroy supposes to consist of urée united to the nitric acid. Ammoniac has no action upon this substance; soda, pot-ash, barytes, and lime, all decompose it: a minute account of the products may be found in Fourcroy. Urée possesses the singular property of entirely changing the form of the crystals of muriat of soda and of ammoniac; it is yet uncertain whether it extends this effect to any other of the neutral salts: this substance is more readily dissolved in hot than in cold alcohol; it is precipitated in a crystalline form, by cooling a saturated solution of it in hot alcohol.

Mr. Cruickshanks's analysis of recent urine differs in some respects from Fourcroy's. The former chemist enumerates the following substances as existing in the residuum produced by evaporation: "The muriats of pot-ash and soda, the phosphats of lime, soda, and ammoniac, the phosphoric and lithic acids, with animal, extractive matter." Mr. Cruickshanks seems not to have been fully aware of the peculiar nature of the animal extractive matter, as he says, that it yields by distillation "nothing more than the usual products from animal substances." He details

tails at length the action of the diluted nitric acid upon it, and describes the lamellated crystalline matter which is thus produced; but he differs from Fourcroy respecting its nature, as he conceives it to be "an animal acid hitherto unknown, whose base exists in this extractive matter."— Cruickshanks estimates the quantity of gelatine discoverable by the action of tannin, to be about 1 grain in 1 oz. of healthy urine. Fourcroy considers the muriat of potash as a substance which is only occasionally detected in the urine; but Cruickshanks, on the contrary, conceives that this salt is always present, and generally in greater plenty than the muriat of soda. In the analysis of Cruickshank, we find no mention of the phosphat of magnesia, nor of the Benzoic acid, the former of which substances appears to have been first detected in the urine by Fourcroy and Vauquelin, the latter by Scheele.

Sect. 2. The state of the urine after its component parts have undergone a change, but before the putrid fermentation has commenced.

One of the first changes which takes place in urine is the deposition of a red powder, which is found to be the uric acid; it is separated, in part at least, during the cooling of the urine, as it is much more soluble in hot than in cold water. Another change which soon begins to be produced, is the loss of its acid properties; this depends upon the generation of ammoniac, which saturates the excess of phosphoric acid; the phosphat of lime is therefore no longer soluble, but is precipitated in the form of a whitish powder. The production of ammoniac continues to increase, and besides saturating the phosphoric, uric, and benzoic acids, it is in part united to the phosphat of magnesia and produces with it a triple salt. This magnesian phosphat of ammoniac, not being soluble in water, is also deposited. When the urine has advanced to this state, its sensible properties and general appearance become much altered, and the production of carbonic acid announces that the complete putrefactive fermentation has taken place.

Sect. 3. The state of the urine after it has become putrid.

The peculiar animal matter to which Fourcroy and Vauquelin have given the name of Urée, is the substance upon which most of the changes depend, both in urine when recently voided, and in this fluid when it has acquired the putrid state. The facility with which it is decomposed, forms one of its distinguishing characters; and Fourcroy has discovered, that the heat of boiling water is sufficient

to

to convert it almost entirely into the carbonat of ammoniac. Animal bodies, in general, show a greater readiness to decomposition than vegetable substances, and this property appears to be in proportion to the quantity of azote which they contain; the urée, as was remarked above, contains an unusually large proportion of this element. The first operation of the urée is the production of ammoniac, by which the first sets of changes are produced. In addition to the ammoniac, the urée now begins to generate carbonic acid; and this coming into contact with the alkali immediately upon being produced, is neutralized, and a carbonat of ammoniac is formed. As the decomposition of the urée becomes more complete, acetous acid is also evolved; and this, as in the former case, is converted into the acetit of ammoniac. While these several changes are going forwards, the fluid becomes entirely altered in its colour, smell, and other sensible properties, and will also be found to differ very materially from recent urine in its chemical constituents. The following are the ingredients of putrid urine: 1st. A portion of urée, still undecomposed; 2d. Ammoniac in excess; 3d. Phosphat of ammoniac; 4th. Magnesian-phosphat of ammoniac; 5th. Urat of ammoniac; 6th. Acetit of ammoniac; 7th. Benzoat of ammoniac; 8th. Muriat of ammoniac; 9th. Carbonat of ammoniac; 10th. Muriat of soda; 11th. Ternary, composed of phosphat of soda and ammoniac. The gelatine is at first precipitated, and afterwards probably decomposed; the phosphat of lime is also precipitated.

Sect. 4. Substances which are occasionally found in urine.

In this class Fourcroy ranks the following bodies: Muriat of pot-ash, sulphat of soda, oxalat of lime, albumen, and silex. To these may be added a variety of substances which are immediately derived from the food; the specific odour of many vegetables is perceived in the urine soon after they have been employed as articles of diet or medicine; and after the use of iron and nitre, they have been detected in the urine by their appropriate tests. The colouring matter of rhubarb and madder are also carried out of the body by the urinary organs; and from the effects produced, we may conclude that the irritating part of cantharides is conveyed to the bladder unchanged through the course of the circulation. It is probable, that as experiments are multiplied upon the urine, still more extraneous substances will be discovered there; its visible appearance and smell are known to be affected in some measure

sure by almost all the substances that are received into the stomach.

Sect. 5. The state of the urine when the system is affected by disease.

The varieties which are produced in the urine by different diseases have attracted the attention of mankind from the earliest ages; but, owing to the imperfect state of chemical knowledge, little accurate information has been obtained respecting the nature or causes of these changes. Fourcroy enumerates the following different species of urine, each of which is produced by some specific morbid state of the body; the inflammatory, the bilious, the critical, the nervous, the gouty, the calculous, the rickety, and the diabetic; to which, according to the observations of Mr. Cruickshanks, we may add the urine of dropsical patients; future observations will probably enlarge the list. It must indeed be acknowledged, that little improvement either in the theory or practice of medicine has hitherto been derived from the examination of the urine; but this may be ascribed to the imperfect and even erroneous ideas that have been entertained respecting this fluid. The urine of diabetes is that species on which the most numerous and accurate experiments have been made, and the singular fact of the production of saccharine matter, in every respect similar to the sugar of vegetables, is established beyond a possibility of doubt. Yet the analysis of diabetic urine is still very imperfect; we are ignorant what quantity of ureé it contains, or whether it is similar to this substance as it exists in healthy urine; and the nature and properties of its saline impregnations are still undetermined. The spontaneous changes which it undergoes, have hitherto been examined only in a vague and cursory manner, and little is yet known respecting the operation of the different chemical re-agents upon it. We are little acquainted with the chemical nature of either *inflammatory* or *critical* urine. They are known to deposit a large quantity of a reddish sediment, which has been supposed to consist of phosphat of lime mixed with the uric acid. Mr. Cruickshanks informs us, that oxygenated muriat of mercury, when thrown into the urine of patients, with an inflammatory action of the vessels, causes a milkiness, and throws down a white precipitate. It has been generally imagined that *bilious* urine differs from healthy urine solely by the addition of a quantity of bile which is dissolved in it; Fourcroy however is disposed to doubt whether this is actually the case. *Nervous* urine

consists

consists probably of the usual constituents, only diluted with a much larger proportion of water. A copious sediment of the phosphat of lime is generally observed in the urine of *gouty* persons; Berthollet has discovered that their urine contains less than the usual proportion of uncombined phosphoric acid, which in healthy urine keeps the phosphat of lime suspended; before the accession of a paroxysm he has observed the acid quality of the urine to disappear altogether. Notwithstanding the numerous experiments which have been made upon the subject, we are still unable to ascertain the precise nature of *calculous* urine. Urinary calculi certainly differ very materially from each other in their chemical nature; and, probably, the urine from which they are formed would have been found equally various in its composition. It is probable that in these cases there is an excess of animal matter, but it still remains to be determined whether this is albumen, gelatine, or urée. The uric acid constitutes a considerable proportion of at least the greatest number of calculi, and in these instances we may conjecture that this acid exists in unusual quantity in the urine. Oxalat of lime, silex, and other substances, have occasionally been found in calculi; but these are to be regarded as accidental, and are not to be considered as essential to calculous urine. In some cases they appear to act merely mechanically, by affording a solid centre about which the other substances can more conveniently concrete. The large quantity of sediment which is deposited from the urine of *rickety* children, is generally considered to consist of the phosphat of lime proceeding from the decomposition of their bones, an effect which has been ascribed to the generation of oxalic acid in the system. Respecting *dropsical* urine, we are informed by Cruickshanks that nitric acid, the oxygenated muriat of mercury, and alum, produce a precipitation which appears to be of a serous nature.

This general view of the different kinds of morbid urine will probably be found to contain all the well ascertained facts upon the subject; and while it shows the very imperfect state of our knowledge respecting the diseases of this fluid, it strongly points out the necessity of a more accurate investigation of this important part of physiology.

March 10, 1803.

Of

Of the Extermination *of the* Small-Pox.

THE loathsome appearance of the natural Small-pox, as well as the really dangerous nature of the disease, must always have rendered an attack of that malady an object of terror to mankind; and if we refer to the days of Sydenham and of Morton, we shall find that a large share of the emoluments of the medical profession was derived from the treatment of this disease. The introduction of inoculation tended considerably to diminish those emoluments. But although the Faculty cannot boast of the honour of introducing that important Discovery, they warmly interested themselves in promulgating it, and cheerfully sacrificed more selfish and interested considerations, in order to promote the general welfare of mankind.

But the liberal behaviour of the Faculty on that occasion, bears no comparison with their present disinterested conduct. Inoculation did not wholly deprive the Small-pox of its terrific features, or of its danger. The practice of inoculation still produced a handsome income to the practitioners of physic, though it might be divided among a larger number of individuals, or diffused through an inferior sphere of the profession. But to attempt the utter annihilation of the Small-pox, breathes a higher tone of disinterested benevolence; it exhibits, indeed, a singular and surprising example of a sacrifice of self interest, at the shrine of public virtue. Not less astonishing, than if we were to behold the whole respectable corps of counsellors, attornies, and bailiffs, laying their wigs, their heads I mean, together, to form such a code of pure, equitable, and intelligible laws, as would in future enable mankind to live in concord and amity, and supersede the necessity of all legal proceedings in the common courts of justice.

The eagerness and enthusiasm, nearly equal to that of the antient crusaders, with which medical men have propagated this discovery, are not easily to be accounted for. In its day, the discovery of inoculation was, perhaps, equal in importance to that of the Vaccinia; but there was no such fury in forcing it down the throats of mankind. People were left to the freedom of their own choice, and inoculation was diffused in proportion to the good sense and discernment of mankind. Being somewhat inclined to suspect the disinterestedness of all men, when it is

opposed

opposed by their interest, I am apt to think that medical men were afraid lest the practice of Vaccination should slip through their fingers, and were therefore in haste to reap all the profitable fruits of this discovery, ere mankind were aware that their interference was unnecessary. It is evident indeed, that the communication of this happy discovery must depend on its being taken out of the hands of the Faculty. The Small-pox will never be extirpated till every parent is in the habit of inserting the vaccinia in the arm of his child, as regularly as they carry it to church to be christened. *A propos!* How would it answer to employ the clergy in this benevolent purpose, and have both the operations performed at the same time? It would have given a stronger proof of professional disinterestedness to have seen plans circulated containing plain directions for parents to inoculate their own children, than to behold not only individual *persons*, but even *circles* of medical men, puffing off the safety of the Cow-pock in the public prints, and themselves obliquely as the only beings who knew how to manage it.

Having thus given the Faculty due credit for the purity and disinterestedness of their conduct on the present occasion, let us shortly enquire what beneficial effects their new practice is likely to have in a political point of view. That as great a number of mankind exist at all times, and in all places, as can procure the food they wish, is a point I believe generally agreed upon by every enlightened writer on political economy; or, if any doubts on this subject remained, they have been compleatly removed by Mr. Malthas in his late truly Philosophical Essay on the Principle of Population. That gentleman has decidedly proved, that while population proceeds in a geometrical ratio, or by multiplication, the utmost efforts of the industry of mankind cannot augment the means of their subsistance faster than in an arithmetical ratio, or by addition, and that of course there is, at all times, a superfluity of population compared with the means of existence. To effect a due equilibrium between these two opposing forces, appears to be one purpose of the introduction of vice and misery into the system of the world; the former tending to prevent, and the latter to diminish the too rapid increase of mankind. Disease is a species of misery; and as nations grow old population increases, while the natural fertility of the soil diminishes in a more rapid ratio than the labours of men can augment its productive powers; new diseases spring up to thin, from time to time, the

the ranks of mankind, and equalize the principles of generation and production. Among this class of the instruments of Providence, must the Small-pox be reckoned; while syphilis must be classed among the list of preventives. Neither of these diseases were known to the antients. How well the Small-pox has performed its part, is proved by the fact, that the numbers who die of that disease, are more now than before the introduction of inoculation. Among that class of society, indeed, who could afford to be at the expence and trouble of having their children inoculated, the hideous scars of the disease are less frequently met with, and the appearance of the human face divine is improved, but the average number of persons who perish by the disease has not been diminished among the lower, the more numerous class of society; among that class of whom society may be said, in fact, to consist, its ravages have been undiminished.

If the necessity of these equalizing forces be allowed, and no person who has perused the above Treatise can doubt it, is there not reason to apprehend some mischief from attempting to throw any one of them out of action? When the gradual and unheeded action of disease, and of infant mortality, become inadequate to check the progress of the increasement of mankind, have we not reason to dread that war, famine, or pestilence, those awful ministers of heaven's wrath, may become necessary to rectify the idle interference of medling man.

Examples of such mistaken policy are not wanting. In a district of America, the inhabitants took it into their heads that a peculiar species of pigeon destroyed their crops. The thunder of the gun never ceased till they were wholly exterminated. But in proportion as their numbers were diminished, so was the produce of the soil. When too late, it was discovered that these useful animals preyed upon the insects which, in fact, destroyed the grain; and in order to enable them to reap their usual harvests, they were obliged, with considerable trouble, to renew the breed of their feathered friends. In this country, till very lately, a similar mistake prevailed respecting moles. They were supposed to injure vegetation, and therefore universally persecuted; whereas, in fact, they are carnivorous animals, preying on the slug, the great enemy of horticulture.

I might farther illustrate this point, by shewing that disease, and particularly epidemics, are rare in colonies and new settled countries, but augment with the age of society; for nations have their diseases as well as individuals, and at length

length destroy peculiar aggregations of mankind; as is the case in Egypt and Africa, once the most flourishing parts of the world, now almost depopulated, and in great measure by the effects of small-pox, measles, and pestilence, which from thence have extended their ravages to other parts of Europe; but I have already trespassed too long upon your time.

I humbly presume to think, that medical men would do as well to confine themselves to their own sphere, and endeavour to benefit those individuals who applied to them for assistance, letting the welfare of mankind find its own level. The art of legislation is out of their line. It has been well defined by a poet, who himself honoured the fraternity as a member. Virgil describes his physician as one who

> Scire potestates herbarum, usumque medendi
> Maluit; et *mutas* agitare *inglorius* artes.

Benevolence, or public good, too often serves men, and sometimes I believe without their being conscious of it, as a stalking-horse, to hide their own interested motives.

These considerations, in the mind of the writer, militate strongly against the sanguine hopes of the amelioration of the condition of man, expected by some from the practice of the Cow-pock; and they apply with tenfold force against the establishment of it by law.* He may, however, be wrong, and is open to conviction; if any of your Correspondents will deign to enlighten his mind, it will confer a favour on, Yours,

SCEPTICUS.

A Case *of* Thoracic Adhesions; *communicated by* Mr. M. F. Wagstaffe, *of Southwark.*

ON the 16th of January, 1802, I was requested to attend the daughter of Mr. Morris, of the Borough, about fourteen years of age, thin spare habit, and sallow complexion, but of an active disposition, labouring under a severe attack of rheumatismus acutus, evidently characterised by

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* We do not believe that any person ever thought of establishing Vaccination by law. We are no more friendly to *such* legislative interference than S. himself; but we observe that all governments occasionally do, and we think they ought, to attend still more to the *health* of the people. Ed.

severe pain and swelling of the joints, glossy white skin, with considerable heat; tongue white, and some degree of dyspnœa. In this state, I gave her P. ipecac. c. in small doses, combined with magnesia and volatile tincture of guaiacum; other diaphoretics occasionally. The pulse was in general full, yet sometimes quick and weak, varying according to the quantity of rest, for which purpose opiates were occasionally resorted to. After attending her about ten days, and gaining but little advantage, a physician was consulted, who thought her in much danger; he prescribed ant. tart. gr. ß. calomelanos, gr. j. to be divided into four pills, taking one every six hours, with a diaphoretic draught, and an anodyne bolus at night; he found her much better on his third visit, and took his leave. This plan was continued a few days when the calomel was obliged to be omitted. She continued fluctuating for six weeks, when she left town, and returned in a short space of time, in apparent good health, continuing so till the beginning of October, when she was again attacked in the same manner. The disease had scarcely existed a week when the rheumatic symptoms disappeared, leaving a most distressing cough, excruciating pain in the left side, palpitation of the heart, and respiration much impeded, with great dread of suffocation; pulse from 100 to 140, sometimes throbbing, at other times weak. At this time I was induced to take five ounces of blood from the arm, which afforded temporary relief. The blood exhibited but slight marks of inflammation.

A few days after this, the respiration became very difficult, attended with occasional vomiting, and excruciating pain in the left side. In this state she was seen by another physician, who considered her situation extremely dangerous, from an idea of much adhesion about the heart and lungs, and the probability of effusion into the cavity of the chest. He directed tinct. digitalis from four to eight drops every six hours. emp. vesic. lateri affect. under which treatment she recovered very much, so indeed as to be able to eat with considerable appetite and retain her food on the stomach. She also had natural refreshing sleep. At this time she took small doses of calomel with digitalis; but after a few days she again relapsed into all the former distressing symptoms, and on November 23, expired in great agony.

It has been usual to consider acute rheumatism as a tedious rather than a dangerous disease. In the case before us, it becomes a question how far it was a remote cause of death

death by inducing inflammation of the thoracic viscera? and it also excites inquiry whether that doctrine, (so generally propagated) which forbids the use of the lancet in acute rheumatism, is well founded?

Having permission to inspect the body, my friend Mr. Taunton kindly assisted me, when we found the appearances as follow:

On raising the sternum, the adhesion of the parts immediately underneath that bone was stronger than in a natural state, and compleatly obliterated the anterior mediastinum.

Both cavities of the thorax had suffered a similar fate, by the strong and extensive adhesions which had taken place.

On examining the left lung, which was placed in the posterior part near the spine, it was found very small, and adhering in every direction; the convex side to the pleura, lining the intercostal muscles, and the concave side to that part of the pleura which covers the pericardium. The substance of the lung appeared healthy.

The right lung adhered to every part with which it came in contact; its substance was natural.

The heart was enlarged, placed more to the left side, and the apex lower than natural.

Upon attempting to cut through the pericardium, it appeared of a firm consistence, and was so closely attached to the heart that it was very difficult in most parts, and in some quite impossible, to separate it.

The internal structure of the heart was healthy, and the valves natural.

The abdominal viscera were all healthy and in their usual situations.

I have taken the liberty to add three cases of peculiarity in the Cow-pox.

Case 1. I inoculated a child about three months old with genuine vaccine fluid, which excited inflammation and proceeded regularly till the 8th day, when the child was attacked with vomiting and diarrhœa, succeeded by convulsions, which terminated the next day in death.

Case 2. Another child, inoculated at the same time, proceeded regularly until the 9th day, when she was attacked with vomiting and diarrhœa, succeeded by convulsions, which continued six weeks, and then terminated fatally.

I shall make no comments on these cases, as I could much

much wish for the sentiments of some of your correspondents who have seen more of the disease than myself.

The first child was in perfect health when inoculated; the second had a troublesome cough.

CASE 3. A few weeks ago I inoculated a child with vaccine fluid in both arms, one of which inflamed, and went through the usual process; the other, as I supposed, had failed. On the 13th day after inoculation the child was taken into the country, and in the course of two or three days the nurse observed the other arm inflamed; the inflammation continued to spread, and maturated at the usual time; the only difference between the two was, that the latter pustule was not so large as the former.

Southwark, Feb. 18, 1803.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

PERMIT me to say that Dr. Kinglake's use of cold water in the gout is not so new and peculiar to himself as he appears to imagine. The illustrious Harvey, discoverer of the circulation, used to plunge his feet into cold water to mitigate the severity of painful paroxysms of that disease. It has even been said, that he shortened his life by that practice.

As Dr. K. calls loudly upon his medical brethren to communicate any observations which may enable him to make up his mind as soon as possible, the following case, on the authenticity of which he may depend, is much at his service.

The late celebrated Dr. Gregory of Edinburgh, father of the present Professor of Medicine in that University, was very liable to gout. A friend of the present writer called on him one evening, and found him bathing his feet in cold water. He observed to the Doctor, that he was doing what he would hardly recommend to his patients. No, said the Doctor, but this application mitigates pain, which I am unwilling to bear, and I have hitherto experienced no bad effects from it. The next morning the Doctor, to the regret of every admirer of science, and of professional liberality, was found lifeless in his bed.

But why trouble ourselves any farther about the Gout? One

One gentleman can completely pump out the gout from the system in a day or two! and another has discovered a remedy, a few spoons full of which will enable a cripple to rise from his bed, put on a pair of tight shoes, eat a good dinner, and afterwards dance a hornpipe. Surely, one remedy for a disease is sufficient; my only fear is, that unless we can find out some new diseases, for which as yet there are no remedies, the Faculty must starve!

A CONSTANT READER.

To JOHN RING, Esq.

SIR,

WHEN you did me the honour of applying for my signature of approbation on Vaccine Inoculation, I informed you, that, at that time, I had not had sufficient experience in it to make up my mind upon the subject; but having now practised it to very considerable extent, and with the most complete success, I feel it a duty due to the public and you, Sir, (for the unwearied attention paid in investigating this subject) to acknowledge now, my fullest confidence in it, and shall beg leave to trouble you with some observations, and at the same time recite a case or two.

At the early commencement of Vaccine Inoculation, I confess, I did not think it would ever supercede the Variolous; in this, I perhaps might be biassed by the great success which had attended a very extensive inoculation for the Small-pox, having inoculated, and seen treated by my father, between six and seven thousand patients, therefore, it cannot appear a matter of wonder if at first I was sceptical in this instance. And those parents who had witnessed the mildness of the disease under my particular treatment, would not permit me to use the Vaccine. But I feel a satisfaction in declaring, that there is not a comparison to be made, even under the mild form I have happily experienced. As a proof of which I vaccinated my last child, and strenuously endeavour to persuade every parent to have it used, but cannot always prevail. The greater part I have inoculated again with Small-pox matter, but in no instance have produced more than a slight local inflammation, for a few days, except in the following.

On September 26, 1801, I inoculated the daughter of Mrs. Snow, of Charlton Street, about two years and a half old, and did it in both arms, the one by puncture, the

 other

other by incision, with variolous matter taken from the arm of my own child on the eighth day, (at which period I conceive the virus to be most active.) On the 30th both arms were inflamed, but the one by incision most so. The 2d of October, Dr. Boys went with me to see the child; he agreed with me, that the inflammation (on the incised arm) was too violent for the time, and would subside without any fever. On the 4th, I found the child very feverish, the pulse being 130, and was informed she had been unwell since noon the day before. Dr. Boys saw the child again this day, as did Dr. M'Cammon, (now officiating at the Dispensary, Charles Street, Westminster,) and another medical gentleman. I believe they were all of opinion that an eruption would take place; but, on the 5th, the child was better, with general exanthemata over it; upon the thighs it had the appearance of urticaria. I did not give any medicine, being determined not to interfere, but understood the nurse had supplied the child with (their favorite remedy) saffron tea; being convinced, as she said, that it would have the Small-pox. On the 6th, the fever was quite gone; the inflammation upon the incised arm declining. On the 7th, there was great plenty of matter in both arms. I took some on quills. Dr. Boys wished for a quill, but as he did not send for it, I conclude he had not a patient at that time, on whom he would like to make trial of it; but Dr. M'Cammon used some, and produced a mild Small-pox with it. He informed me, that two or three were inoculated from his patient, who had the disease in a favorable manner. Though the inflammation in this case was of longer duration than usual, and produced the most unfavourable apprehensions, yet it is a satisfactory one, as it tends to prove, in the most incontrovertible manner, the impossibility of producing Small-pox eruption after Vaccine Inoculation. I must observe, that the child was vaccinated on November 22, 1800, and that the areola was later in forming than in general, not beginning before the eleventh day. Two children of a Mr. Hoskins were inoculated at the same time from my child, and in both, the inflammation continued until the seventh day, when it went off without any symptom of fever. They were also vaccinated twelve months before. I am happy in having an opportunity of stating a case, where I infected a child with the vaccine matter, when I could not with variolous. Every practitioner must have met with cases, when, under some particular constitution, the habit is not susceptible of the disease, either by infection or inoculation;

culation; I have of late met with two instances in the same family.

In August, 1800, Mr. ———, had two children at the same time confined with the confluent Small-pox, one of whom died. An infant of three weeks old, was exposed to the infection the whole time, being always in the same room, and sometimes bed. I could not persuade the parents to have the child inoculated at that time, and to the Vaccine they positively objected. It did not receive the infection, and on the 7th of December following, was inoculated with fresh variolous matter without effect, and this was repeated three times with no better success. The father then declared himself satisfied, that the child must have received the infection naturally; I endeavoured to convince him to the contrary, and wished to insert matter again in May last, but he refused. On the 20th of last August, the mother was confined again. The former child being at a friend's, but, on the 27th was sent home ill, with symptoms of the Small-pox, which proved to be the fact, and were confluent in the face, but he recovered. The parents were now determined to have the infant inoculated with the Small-pox, but wished to have it done from their own child; therefore, as soon as matter could be procured from the face, it was applied by two punctures in the same arm, but it did not succeed. In three days after, I made use of the whole contents of one pustule, taken from the breast; having inserted it by puncture, as also by incision, this failed likewise. I then took matter from a fine pustule on the leg, just upon the turn; with this I was not more fortunate. The matter in this case was only carried from the bed to the window before used. This child also escaped the disease naturally, though the brother always slept in the bed with it. On the 12th of November, I inserted variolous matter again, without producing the desired effect. Being so often baffled, and having witnessed the sufferings of the former children, I thought myself justified in making use of vaccine matter, (though contrary to the parent's order) to try if the constitution would receive that. I have the gratification to add that it completely succeeded the first time. The parents did not suspect what I had done, but the nurse calling one day, told them it looked like the Cow-pox. The matter employed was a month old, kept on a quill, and used as I stated in No. 31, of the Medical and Physical Journal for September, 1801; you perhaps, Sir, did not see the description I there gave of my method, but in the number for the present

present month, a statement very similar is given by you. Since that information was published, I have sent vaccine matter to Ireland, and several friends in the country, and have received the most flattering testimony of its utility. This I know, from two years experience, that, every gentleman has it in his power of always being provided with a certainty of keeping it active, by the means there described. In some instances I have sealed the end of the quills beside enclosing them securely in paper. Fourteen months back I inoculated in Baker Street, a patient of Dr. Boys, with variolous matter kept a considerable time, to shew him the manner I employed it; he expressed himself perfectly satisfied.

I have extended this letter to a much greater length than was at first intended, but trust it will be conceived to have arisen from the laudable motive of giving information upon a subject wherein the lives of so many thousands are concerned. And am, &c.

Soho Square, Jan. 22, 1803. C. DENNETT.

To the Editors of the Medical and Physical Journal.

Gentlemen,

I Am fearful you will think I trespass too much on your Journal, in offering another Paper before the former, one you have done me the favour to acknowledge, has been published; but, on perusing the Number for the present month, I find an account of the epidemic raging at Paris; which to me appears similar to the complaint now general in this metropolis, (and called by some the Influenza) except that here both sexes are equally liable to it.

The treatment of practitioners I have found materially to differ, and the termination uncertain; but perceiving very early, that bleeding appeared improper, and having adopted a method attended with uniform success, is the only apology I can offer for sending you these observations; and whether my ideas are well founded or not, I hope the intention will appear to have arisen from an humble attempt to relieve the afflicted, as I do not presume to add any thing new.

The general symptoms I need not describe. After attending a few patients, I was satisfied in my own mind, that the complaint was chiefly confined to the membranous

ous lining of the trachea, &c. therefore, my practice was to promote expectoration, using demulcent drinks, and avoiding every thing heating. In one case only, where the inflammatory peripneumonic symptoms appeared strong, I was induced to bleed; which was approved of by further advice called in the next day; and though the patient appeared relieved for a time, yet I was convinced it had done injury, as the expectoration was checked, and the cough and dyspnœa more troublesome, attended with great debility. The long illness of this man induced me to decline the lancet, and repeated observation in the cases where it has been ordered by superior authority, has confirmed my former opinion. Cupping is less objectionable, but even that, where much blood has been taken away, has to me appeared to have done mischief. Having said thus much, with diffidence, I beg to state my general practice.

Where the dyspnœa was great, a blister has been applied to the sternum, and in some cases repeated. The medicine given was ipecacuanha wine and tincture of squills, mixed with a solution of spermaceti or mucilage of gum arabic, in as large doses as the stomach would bear; and when the stomach has been very irritable, have added prepared kali with great advantage. For three weeks past I have attended a considerable number daily, afflicted with this complaint; and in no one instance has the above plan failed of quick relief, where the patient had not been bled.

In the first cases I employed the true James's powder, and also tartarized antimony, but found both affect the stomach and bowels too much, though given in the usual doses.

I am, &c.

Soho Square, March 11, 1803.

C. DENNETT.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

YOUR request to know the name of the Author of the "Considerations to shew that the idea of effecting a radical cure of the Bubonocele ought not to be entirely abandoned," inserted in the 48th Number of your Journal, turns immediately into a sort of compulsion, when you add that otherwise you shall be under the necessity of giving the priority

priority of a proposal in them to Mr. Carlisle, who is stated publicly to have signified his intention to perform such an operation at the weekly consultation of the Westminster Hospital, seven weeks before the receipt of S. C's. letter. Placed in this situation, it cannot for a moment be a matter of hesitation with me to declare, that I am the Author of the above paper:—it is done the more willingly, because, at the same time, I shall take the opportunity to shew that my communication is totally independent of Mr. Carlisle, and to explain, not only that this gentleman posesses no right to the priority of the proposal superior to mine, but also that I do not mean to claim it myself as an original innovation in surgery.

It was more than two years ago, during my apprenticeship to Mr. Ramsden, of St. Bartholomew's Hospital, that the idea of the possibility of radically curing the Bubonocele first struck me, and which, in the course of conversation, I more than once mentioned to other surgical students: But my thoughts upon this subject had become quite extinct till about five months ago, when finding, on the perusal of Mr. Sharp's Critical Enquiry, that this excellent surgeon had not rejected the practicability of radically curing the Bubonocele, my former considerations naturally revived; and, as early as this, I communicated my opinion to some others, and more particularly to Mr. Lawrence, who demonstrates anatomy at the above hospital. At length I wrote the little paper contained in your Journal, rather with a view to excite others to employ their superior talents in a further investigation of the matter, than on account of any value placed upon that trifling production. In extending our researches back into former writers upon surgery, we shall discover that no small share of those inventions, claimed by surgeons of the present day, are actually not modern; and either that some strong allusions, leading to them, have been thrown out in the works of their predecessors, or, what is more, that an open description of them is to be met with. Whatever vanity might once have been entertained on my part, concerning the origin of the proposal, certain it is that it was soon dispelled by the more philosophical pleasure which I derived from learning that a similar operation had both been antecedently proposed, and often practised with great success. For this information we need only refer to the second volume of Heister's Surgery, p. 110. Nor must it be forgotten here to notice the opinion of Le Dran, who thought that a ligature might be made on the hernial sac

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in the hernia cruralis and inguinalis in women, but not for the latter case in men, for fear of injuring the testicle. See the remarks following his 58th Observation. The names of several other writers might be cited to prove, either that the possibility of radically curing hernia by the proposal in question had been conceived by them, or successfully practised. Let it be sufficient just to observe, that Mr. Latta, in his System of Surgery, describes a like mode of radically curing the Bubonocele, (Vid. Vol. I. p. 285) who, though he does not venture to recommend it on his own experience, says, that it is founded in reason, and is certainly well worth the attention of surgeons.

Saviand's method of procuring a permanent cure of the exomphalos, for the antiquity of which we must mount up to Celsus, in point of principle, bears so great similitude to this operation, that we ought not to look upon it as unconnected with the present subject; and if it be true, that he might have operated more elegantly by first dividing the integuments, and then applying his ligature round the hernial sac, the very fact of its being done in not the most advantageous style, and yet successfully, tends to prove in a more convincing manner, that a ligature may be applied, at least on young subjects, in this way, without a bad event. (See his Nouveau Recueil d'Observations Chirurgicales.)

Desault also cured nine cases of umbilical herniæ in children by that mode, and Celsus advised it to be attempted only from the age of seven to fifteen; it is true, however, as Sabbatier observes, De la Medicine Operatoire, tom. i. p. 128, it may be doubted whether they continued permanently cured.

It only remains for me to express how happy I am in having done this justice to the above authors, which, had I known their claims, would have been rendered them before; it is no less gratifying to me that Mr. Carlisle has announced his intention to do an operation which appears never to have been properly* put to the test of experience in this country, and which reason and the interests of society, and the little we have yet on record concerning it, seem to demand.

Upper Charlotte Street, Fitzroy Square.
March 7, 1803.

I am, &c.
SAMUEL COOPER.

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* See our Address to Correspondents at the end of this Number. Ed.

Case

Case of VACCINATION *suspended by a previous Action of* VARICELLA; *communicated by Mr.* N. WASHBOURN, *Surgeon, of Marlborough, Wilts.*

IN the month of May, 1800, I was consulted by a friend of mine in this town respecting the Cow-Pox, and my opinion relative to its ultimate success, and prevention of the Small-Pox; I gave it, without the least hesitation, as a certain specific against the contagion of that disease; consequently, on the 15th of that month, I vaccinated two children of the family, one of whom received the infection, and went through the disease in a regular manner; but I was much surprized to find, that the younger subject, who was about a year and a half old, did not appear to be infected on the sixth day, but appeared unwell with pyrexia, which indicated the influence of some disease prevailing in the constitution.

Several in this town, and particularly one or two at the same house, were infected with the chicken-pox; no doubt, of course, could be entertained as to the probability of this complaint preventing or suspending the action of the Vaccine disease; for, on the eighth day from inoculation he sickened with the chicken-pox, and had many eruptions over different parts of his body, attended with a troublesome and teasing cough, which occasioned a complete suspension of the Vacciola until the thirteenth day after the insertion of the virus, at which time the pustules began to disappear, and the cuticle at the part incised became elevated, accompanied with inflammation: the disease now put on its regular appearance, and ended in the common way, successfully; the dark spot in the centre of the pustule did not appear until the nineteenth or twentieth day from *Inoculation*; the arm was affected with a phagedenic ulcerated appearance, either from protraction of the disease or from irritation of the child's linen, but was easily cured by the application of ung. resina flav. et hydrargy. nitrat. rub.

This case is such as to point out, clearly and evidently, the doctrine of our predecessors, of the non-existence of two diseases of a cutaneous nature prevailing at one and the same time, in the same constitution.

N. B. Since the introduction of Cow-Pox, I have had an opportunity of exposing a patient for several days, whom I inoculated with the Vaccine disease, in a house where a soldier was labouring under the confluent Small-Pox, and

of

of a particularly malignant nature, who with the greatest difficulty survived the disease; yet my patient resisted the action of variolous contagion, a proof of the utility of the New Inoculation, *(or Jennerian disease)* as well as a corroboration of facts already adduced, and which it is hoped will ultimately lead to a complete extirpation of the *Small-Pox.*

Jan. 10, 1803.

General Meeting *of the* Academy *of* Sciences, Belles Lettres, *and* Arts, *of* Dijon; *held the 19th Fructidor, Year* 10.

At this Meeting the above title was adopted as a more proper denomination, and better suited to recall to our memory the illustrious society to which the present has succeeded.

In the report made of the labours of its members, we remark an account of the phenomenon of Scintillation produced by the concussion of carbonified wood. Three explosions had taken place in the powder mills of Vonges in the space of four months, notwithstanding every precaution being used to prevent it. In consequence of this remarkable repetition, Cit. Lemaitre, inspector general, was ordered to repair to the spot, and enquire into the cause of this accident. The inspector general, already known to the world as the author of many interesting memoirs in Natural History, &c. made a number of experiments, in order to fulfill the object of his mission. The reporter, Cit. Lischever, was present at many of them, and to his account the Academy is indebted for a knowledge of the singular phenomenon of striking fire, on the shock of carbonified wood with any other wood. For a more detailed account, it is necessary to read the history of the experiments, which prove this fact in the most incontestable manner; it realises the suspicions already conceived of the danger of using charcoal in sticks, in the fabrication of gunpowder. Cit. Lischever terminates his Memoir with the following reflection:

"Light and heat, when disengaged from combustible bodies, being so much the more abundant as the combination of oxygen with the body is greater in a given space of time, it should seem from the circumstances of the phenomenon just related, that a small degree of heat only is necessary to produce the combination of oxygen with charcoal, and the combustion of the latter."

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The Academy has proposed the following question as the subject of a prize for the ensuing year:

"Catarrhal fevers are become more frequent than they have ever been. Inflammatory fevers are become more rare. Bilious fevers are less frequent. It is proposed to ascertain the causes which have given rise to this revolution in climate and temperament."

The value of the prize is 500 livres, and the contest is open to every one but members of the Academy.

Bilious and inflammatory affections, which stamped a character on most of the acute diseases of which the ancients have transmitted a faithful account, have evidently given way to the pituitous or catarrhal fever. Diseases of this order are in fact much less common in our days than formerly. It was about the middle of the fifteenth century that they took on that train of symptoms which at present characterize them; and they have been since observed, at different periods, to run over many countries of Europe and give rise to many epidemical diseases more or less mortal; such were those of the years 1775 and 1780. Such a change occurring in the system of diseases which afflict mankind, depend no doubt on the co-operation of a variety of causes as well physical as moral. It would be desirous to determine the description of individuals particularly subject to these diseases, and whether or not they are those of weak constitutions either natural or acquired. Do we not daily observe that women, children, and the aged, are more particularly attacked? Struck by these considerations, and desirous to contribute all in their power to throw light on a subject of so much general importance, the ancient Academy proposed this as the subject for the prize at their public Meeting, August 25, 1788. The Memoirs which were delivered in consequence, were not judged to answer completely the intentions of the Academy; the revolution suspended the further prosecution of the subject, and the present Academy, actuated by the same motives as the former, have renewed the question as a subject of general medical interest.

Memoirs written in the French or Latin languages to be addressed post paid to Cit. Vallot, M. D. Secretary of the Academy, before the 1st Messidor, An. 12.

MONTHLY

MONTHLY REPORTS.

Cases admitted under the Care of the Surgeon of the Finsbury Dispensary, St. John's Square, Clerkenwell, from February 10, to March 10, 1803.

Phlegmone Tibiæ	1	Lues	3
———— Sacri	1	Gonorrhœa	1
Erysipelas	1	Scrophula	2
Mastodynia	2	Steatoma	1
Abscessus	1	Sarcocele	2
Ulcera Artuum	8	Incontinentia Urinæ	1
Leucoma	1	Tinea	1
Vulnera	3	Herpes	1
Fractura Femoris	1	Hæmorrhois	1
———— Claviculæ	1	Bronchocele	1
———— Costæ	1	Exostosis	1
Spasma Malleoli	1	Clavus	1
———— Carpi	1	Eruptiones	2
Contusiones	5	Vacciola	19
Combustura	1		—
Hydarthus Genu	2	Total	68

In the last Report was inserted the publication of the Medical Officers of this Dispensary, respecting the Vaccine Inoculation, and the order of the General Meeting for distributing its blessings among the lower ranks of the community, upon an enlarged scale; not to be confined within the limits of our district, but to embrace the extent of the metropolis, or as much wider a sphere as persons choose to come from to be inoculated; not circumscribed by a necessity of procuring a recommendation from a Governor, as in other cases of disease, but open to all persons by simple application.

The Inoculation commenced on the 28th of February; of course, only two inoculation days had occurred at the time of the closing of this Report. In that time nineteen children have been inoculated, and have passed through the disease in the usual favourable manner. Some time is required in making such an Institution generally known; but from the continually increasing number of applications, there is little doubt but that this Dispensary, being situated in a very populous neighbourhood, will be as fully attended, on this account, as any other place of gratuitous Inoculation in London or its vicinity.

It gives me great pleasure to perceive, that the prejudices

dices of the poorer classes of the people are gradually declining; they embrace with avidity the good which is presented to them. As a proof of that, many of them are no longer sceptics, with respect to the salutary influence of the Vaccine disease, I have lately by several been informed of various unfortunate circumstances having attended or followed the Inoculation: but they have added, that they had no doubt but that the facts had been misrepresented to them; that these persons had not had the proper Vaccine disease; or that the unfavourable circumstances had been occasioned by the intervention of some other disease.

A considerable number of cases have recently occurred, of diseased joints, or what are commonly called white swellings; they are diseases which are very frequent among the poorer ranks of mankind. Although the true white swelling is undoubtedly of a scrophulous nature, yet diseased joints, unconnected with scrophula, or only secondarily connected with it, are constantly occurring, particularly as consequences of rheumatic affections: We see likewise very often, enlargements of the joints in old cases of syphilis, where much mercury has been given; I do not however think that the venereal action ever exerts itself upon the joints, but that the debilitated state of constitution occasioned by the united asthenic actions of a long continuance of the disease, and of large quantities of the specific remedy, are assistants to the variable state of our atmosphere in producing chronic rheumatism, and thickening of the ligaments.

The remedies for white swelling have been very various. The profession may, I think, consider themselves much indebted to Mr. Crowther for bringing into notice an application, by which the most beneficial process, that of a continued discharge, may be produced with much greater ease than by any other mode. In Dispensary practice, it is my constant custom, in these cases, to apply blisters to the joints, and suffer the discharge to continue for a considerable length of time, which is easily effected by the Savin cerate, the remedy above alluded to, when it is faithfully prepared. This mode of treatment, in by far the majority of cases, is productive of every good which can be wished.

68. Hatton Garden. J. RICARDS.

Mr. RICARDS takes this opportunity of informing gentlemen of the profession, that, as much of the success of the Vaccine Inoculation depends upon the matter which is

is employed, he shall be happy to furnish them with recent virus, taken at the proper period, every Monday, (free of expence) if they will send their lancets or glasses to his house, on any of the preceding days, or on Monday mornings, before eleven o'clock, and send for them again in the evening. Gentlemen in the country, by sending them in letters (post paid) shall have them returned by the same conveyance.

Account of Diseases in an Eastern District of London, from February 20, to March 20, 1803.

ACUTE DISEASES.	
Synocha Catarrhalis	47
Pneumonia	4
Rheumatismus Acutus	6
Peripneumonia Notha	7
CHRONIC DISEASES.	
Phthisis Pulmonalis	3
Hæmoptoe	4
Hydrops Pectoris	3
Enterodynia	7
Hæmorrhagia Intestinalis	2
Dyspepsia	12
Angina	4
Menorrhagia	5
Fluor Albus	7
Amenorrhœa	15
Hysteria	6
Hypochondriasis	2
Paralysis	2
Rheumatismus Chronicus	20
PUERPERAL DISEASES.	
Peritonitis	5
Ephemera	8
Phlegmatia Dolens	2
Mastodynia	10
INFANTILE DISEASES.	
Varicella	2
Aphthæ	4
Herpes	3
Ophthalmia	6
Ophthalmia Purulenta	3

The disease by which the greatest number of patients has lately been afflicted, and which has consequently engaged the principal attention of medical men, is a Catarrhal Fever. This disease has been so general as to claim the title of the reigning epidemic, and is very similar to one which prevailed a few years ago, and was denominated Influenza.

It has generally been introduced by chilliness and shiverings, which have been succeeded by violent pains in the head with some discharge from the eyes and nostrils, as in a common catarrh, together with hoarseness and cough. The pain in the head has in some cases been the first symptom, and has been succeeded by giddiness, sickness, and vomiting; and when these symptoms have in some measure subsided, the cough and difficulty of breathing have occurred. These symptoms have been observed in some instances to alternate, and as the cough and other

 affections

affections of the chest have abated, the pain of the head and disorder of the stomach have been increased, and vice versâ. The state of the bowels has been various, sometimes a diarrhœa has succeeded the nausea and sickness, and at other times an obstinate constipation has prevailed. In all cases there has been a considerable heat on the skin, a quick pulse, a white tongue, and a greater or less degree of thirst. The cough has sometimes been exceedingly violent, and has continued almost incessantly for several hours, whilst the sense of stricture on the chest and difficulty of breathing have been very distressing. The expectoration has in general been very free. Some patients have complained of pains in the limbs, very much resembling chronic rheumatism, and there have been instances in which the difficulty of breathing might be, in part, attributed to a similar affection of the intercostal muscles.

A number of anomalous symptoms have been combined with this disease; and, probably, the fatal effects which have been attributed to it, have in many instances arisen from another cause, particularly in old people, many of whom have fallen a sacrifice to Peripneumonia Notha, a disease which in many of its symptoms bears a resemblance to the present epidemic.

In the treatment of this disease much advantage has been derived from an early use of cathartics and emetics. If an antimonial has been combined with the cathartic, in such a manner as to occasion a gradually increasing nausea, and ultimately to produce vomiting; and if this has been succeeded by a copious evacuation of the bowels, the most important relief has been obtained; the pain of the head and uneasiness of the stomach have been greatly mitigated, if not entirely removed.

Bleeding has not in general been necessary, but we have seen some instances where the symptoms of Pneumonia have been so urgent, that an early bleeding would probably have afforded considerable relief. A blister to the sternum has been useful where Dyspnœa has prevailed. At the commencement of the disease, and during the continuance of febrile symptoms, saline remedies alone, or accompanied with antimonials, according to circumstances, are found to be a necessary part of the treatment. The different preparations of the squill are more useful at the decline of the disease than in the earlier stages of it. When febrile symptoms have abated, if the cough continues, the use of a gentle anodyne may be attended with advantage. Pulv. ipec. comp. has been found a convenient formula.

CRITICAL

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

Some Observations on the present Epidemic Catarrhal Fever or Influenza, chiefly in relation to its Mode of Treatment. To which are subjoined, Historical Abstracts concerning the Catarrhal Fevers of 1762, 1775, *and* 1782. By RICHARD PEARSON, M.D. 8vo. pp. 26.

THE Catarrhal Fever, or *Influenza*, which has been for some weeks very generally diffused over this metropolis and its environs, and is now spreading to distant parts of the island, is a subject of considerable interest to medical practitioners, and still more so to those who examine with a philosophic eye into the obscure causes of general epidemics. The disease, to which the term *Influenza* is now irrevocably fixed, has appeared, at intervals, varying over almost every part of Europe; and as it has seldom been of a nature to spread alarm and terror, it has excited all the attention due to so interesting an epidemic from the enquiring physician. The great similarity, amounting almost to identity, of nature between these several epidemics is fully established, but we have still to search for their remote and predisposing cause; and many important questions relating to their nature and character still remain unanswered. In the present instance, it is much too soon to attempt the general history of the epidemic, and the author has therefore confined himself chiefly to a simple relation of the prevailing symptoms, and (what is of immediate consequence) to the mode of treatment which has been found the most successful. He announces his intention of pursuing his inquiries into the subject; which we trust will also be done by every intelligent practitioner in the kingdom. As our Journal may probably reach several parts of the island before the arrival of the epidemic, we shall give, in the Author's words, the whole of his description of its attack.

" The Catarrhal Fever, or Influenza, which is now spreading itself over the whole metropolis, and will probably soon make its way to every part of the kingdom, first shewed itself here towards the end of the last month (February), when a damp and mild state of the atmosphere had succeeded to severe cold. This again has been followed by frost and keen easterly winds during the first part of the present month, (March). Like all similar preceding epidemics, the present Influenza has exhibited various degrees of morbid

bid affection; having been, in some instances, so slight as not to incapacitate persons from continuing their ordinary occupations and pursuits, and scarcely to require the aid of medicine; whilst, in others, the attack has been of such a malignant nature as to endanger and even destroy life.

"The following is its most frequent mode of attack. After some alternations of chilliness and heat, the patient is seized with a heaviness or pain of the head, with sneezing, wateriness of the eyes, hoarseness, and cough. These symptoms come on in the order here stated. In the course of a few hours the head-ach increases, the skin becomes hot, with a pain in the back and limbs, or transitory stitches across the chest. The tongue is white; the pulse quick or frequent, and for the most part soft. There is more or less of sickness at the stomach, and sometimes vomiting. The bowels are generally costive, and considerable uneasiness, often amounting to great pain, is felt in some part of the abdomen. By the second or third night, the cough and fever become greatly aggravated. The former, viz. the cough, is strong, incessant, sometimes dry, but generally accompanied, even at its first coming on, with an expectoration of thin, sharp mucus; the latter, viz. the fever, is attended with increased heat, and with extreme restlessness and anxiety. There is also some confusion of the head. At this time the pulse is often from 100 to 120. In the morning there is a considerable remission of the febrile symptoms; but the cough still continues urgent, and the patient complains of excessive languor and dejection of spirits.

After the fourth or fifth day, where early perspirations have come on, or sufficient evacuations have been procured by the bowels, the fever declines; and although the cough continues, the expectoration is more free, the sputum being of a thicker consistence and milder quality. The urine, which before was high coloured and clear, now becomes turbid, or throws down a sediment. In other instances, the cough goes off without any remarkable degree of expectoration. The lassitude and depression of spirits with restless nights, harass the patient for many days after the decline of fever; which, indeed, in several instances, does not entirely go off after the fifth day, but becomes intermittent, the patient feeling himself worse every other day.

"Such is the most common form of this epidemic. Its modifications, however, as we have before observed, are extremely numerous, so that in some there is a violent head-ach with little catarrhal affection; in others, a sore throat; in others, a peripneumonic condition; and in others, a disordered state of the stomach and bowels."

The above description is sufficiently clear and accurate, if meant to exhibit the genuine form of the epidemic unmixed, (as may be inferred) with the symptoms of any other disease or morbid tendency which may happen to be present at the time of attack. The swelling of the eye-lid and inflammation of the conjunctiva might have

have been mentioned more particularly, as they have, in several instances, been the most marked, and sometimes the only symptoms of the epidemic.

The Author then proceeds to the method of cure, which he introduces by the very judicious observation, that, "as it is the fever which constitutes the essence of the disease, our first attention should be directed to it, and not to the cough, (except when it is accompanied with a true peripneumony); otherwise, by prescribing only for one of its symptoms, we shall make but little impression upon the general morbid affection." Pectoral remedies are not at first to be resorted to, but we should use emetics and mercurial and antimonial cathartics. For the latter purpose, he recommends calomel, joined with about half its weight of pulvis antimonialis, assisted, if requisite, by a solution of some neutral salt. The calomel and antimony seldom fail speedily to produce general diaphoresis, which relieves the symptoms of general fever, but not the cough. This latter, and the dyspnœa, require the application of a blister, to which may be joined the use of aqua ammoniæ acetatæ and ether. After the bowels have been opened, opiates afford relief, but they must be given in very sparing doses. A solution of cream of tartar forms a very proper drink, which may be taken without reserve. In the decline of the disorder, when the cough is still troublesome, squills and ether may be used with advantage, but oily medicines and the pectoral emulsion are improper. The languor, dejection of spirits, and debility left by this epidemic, are so considerable, that, after the first or second day, all attempts to keep up the sweating process should be avoided, the patient should sit out of bed, and the room kept cool and well ventilated. During convalescence, which is often very slow, the author recommends infusions of the bitters combined with natron, but the Peruvian bark and the mineral acids, he observes, are of no avail, and even do harm. The diet should be thin, mild, and mostly vegetable; broths should be avoided, as they keep up an unsalutary perspiration, and increase the head-ach, nausea, and languor.

This is the plan laid down by the author, which is judicious and temperate. In the essential particulars it agrees with the general practice that has been adopted in this metropolis, but in some points it differs so much, that we think more attention might have been paid to this subject. If the author had considered the oily and pectoral emulsions as merely insignificant auxiliaries, little or no notice of them would have been necessary; but as they have actually been employed in London with the most unsparing profusion, an absolute condemnation of these trifling remedies might have been accompanied with some remarks. The same of bark, and the mineral acids, though they have been less used than the former. Blisters have been found so highly beneficial in many instances, that they well deserved a warmer recommendation.

The present epidemic has proved fatal to a considerable number of persons, when combined with pulmonic inflammation or habitual

asthma. The treatment of these delicate cases is referred to the general treatment of peripneumony, but without that discrimination which in the present period would be peculiarly interesting.

On the whole, we can only consider this pamphlet as a sketch, traced out with a hasty pencil, and if generally correct, somewhat deficient in the filling up.

Extracts from the most authentic accounts of the former epidemic catarrhs, or influenzas, are subjoined, which shew in a very satisfactory manner their identity with the present epidemic, and with each other.

Cases of Cancer, with Observations on the Use of Carbonate of Lime in that Disease; by EDWARD KENTISH, M.D. Newcastle upon Tyne, 1802. pp. 48, 8vo.

WHEN the matter of fact contained in these pages is stripped of the profusion of words, of irrelevant matter, and of needless amplification, with which it is invested, it will be found to amount to little more than this, viz. that the author had under his care two cases of perfectly well marked cancer, of the open or ulcerated species, in both of which the treatment that he adopted was the same, and certainly judicious; and to which he employed powdered chalk as the principal topical application, with a success that would be admirable, if a general average could be drawn from two cases, since one terminated in a compleat cure, and the other fatally.

The cases themselves are interesting, and described with apparent fidelity and accuracy. We shall give the author's account of the mode of treatment. In the successful case both breasts were affected, the right was ulcerated; and at the same time the left was swelled and painful, and a thin ichorous discharge oozed out from around the nipple, which threatened rapid ulceration. With a view of equalizing the action of the glandular system, as the author expresses it, and preventing the engorgement which had already taken place in various glands terminating in the death of those parts, he was induced to use the vapour-bath, the effect of which, in discussing hard tumours, he would seem to refer to the solvent power of steam upon inanimate vegetable and animal matter, combined with the local stimulus of heat inducing an equal action on the part affected;—a jumble of ideas, of which he promises an explanation on some future occasion! The carbonate of lime (or chalk) he employed to the ulcerated cancer at the time when the secretion was fully established, and very abundant. The idea of this application was suggested to the author by its well known success in several cases of burns, where the secreting surface is extensive, the discharge profuse, and the process of cicatrization very tardy. As this is the most interesting part of the present treatise, we shall give the author's own explanation of the rationale of the effect of this remedy. "The carbonate of lime was applied half an inch thick, morning and evening, in bare contact with the sore,

sore. This covering repressed the growth of fungus in the central part of the wound, and encouraged the formation of cuticle at the edges. It appeared as if the lime, uniting with the secretion of the cellular membrane, formed a pearly coating similar to the lining of oyster-shells, or probably like shelling in the case of birds. Nor does it seem improbable that the process of skinning, like that of shelling, may be considerably assisted by the addition of lime, either as a carbonate or a phosphate. Birds, at the laying season, as canaries, are incapable of supplying a sufficient quantity of calcareous matter, unless they have a supply of it with their food. Hens, I am informed, if prevented from this supply, lay eggs without shells. Marine animals secrete much calcareous matter; the annual renewal of their shell proves this. The whole bony fabric of animals has lime for its basis, and the secretion in some cases of fracture is very abundant, as is also the want of this principle in some cases of mollities ossium. If lime make so great a part of the animal as the bony system, and if the want of it prevent the purposes of Nature from being carried into effect, as is observed in birds, it is highly probable that in some old obstinate ulcerations, benefit might be derived from giving this principle internally, as well as from its external use." What are we to understand from this medley of absurd and false analogy? Does the Author really mean to assert that calcareous earth actually enters into the composition of the cuticle, as it does into that of bone? Or, does he suppose that the process of skinning is no more than plastering up with animal mucilage and chalk? He might as well talk of *skinning* a wall by white-wash, which is composed of animal size and chalk. The unlearned reader might infer from our Author's explanation of the process of skinning, that marine animals produce their shells by moistening their skin with cellular secretion, and then rubbing themselves against a chalk rock; or, that birds acquire their covering by a sort of natural tarring and feathering.

In the very next sentence however the author gives a very sensible explanation of the use of chalk, in a few words, namely "that it absorbs the redundant secretion in a more perfect manner than the substance which has been so long in use among surgeons, I mean, the lint or charpie, with which it is the custom to fill all wounds. It also corrects the fœtor arising from ill conditioned wounds."

The progress of this case is interesting; we shall give it in the Author's words: "The deep foul ulcer which presented itself when the mammary glands were thrown off, left a very considerable void. This was filled up to the level of the adjoining cuticle with very fine levigated and prepared creta. The fœtor of the discharge became less, the matter was also of a better consistence, and in smaller quantity. In clearing away the incrusted edges of the sore with a spatula, after having taken away several coatings, I had the extreme pleasure of perceiving the shelly pellicle forming upon the cellular membrane, at an acute angle with the cuticle. The wound was

was dressed once a day; and at the end of a month I first began to observe this appearance. From such an effort, I became extremely anxious to second the endeavours of Nature. Some fungusses, which appeared to obstruct this process, yielded to the reiterated applications of alumen ustum, over which the creta, as usual, was applied. There still remained some points where the ulcers continued rebellious, notwithstanding the application of the alumen. To give them a new surface, which I was in hopes I should be enabled to cicatrize, I applied, by means of a probe armed with lint and moistened, some of Plunkett's powder, made according to the recipe in the Pharmacopœia Chirurgia. By this means I was enabled just to touch the points of the sore which appeared to me to require it; I afterwards put on the powdered creta as before. The arsenical powder prevented the growth of fungus."

The author very judiciously compleated the cure of the successful case by the application of straps of adhesive plaster, in the method which he is pleased to call Mr. Baynton's, but which in similar cases had been employed, long before that gentleman called the attention of the Faculty to its more extensive use.

In so terrible and hopeless a malady as confirmed cancer, every rational attempt at cure, or relief, even every plausible project, should meet with attention. The solitary successful case of Dr. Ewart, where carbonic acid was employed, was followed up by repeated experiments, in which unfortunately the sanguine hopes that might have been entertained, were frustrated; equal attention should be paid to the present proposal, and we earnestly wish that it may meet with better success.

An Account of the Galvanic Experiments performed by JOHN ALDINI, *Professor of Experimental Philosophy in the University of Bologna, &c. on the Body of a Malefactor executed at Newgate, January* 17, 1803. pp. 34, 8vo.

GALVANISM is every day offering so many new objects to our research, that we have no hesitation in pronouncing it the most curious subject of inquiry that is now engaging the attention of the lovers of natural philosophy. The experiments lately performed in this town by Prof. Aldini, must be fresh in the memory of those who were gratified with a sight of these infinitely interesting phenomena; and to those who were not so fortunate, this short narration will be perused with interest, and may suggest a variety of new and untried objects of inquiry. The subject of the experiments was a malefactor executed at Newgate, on the morning of the 17th of January last. The body was exposed a whole hour in a temperature of about 30°, after which it was delivered to the College of Surgeons, in pursuance of the usual sentence of the law, and was transferred to Prof. Aldini, who with the assistance of Mr. Keate, Mr. Carpue, Mr. Cuthbertson, and other able men, subjected it to the following experiments, the Galvanic power being in all of them supplied

supplied by three troughs, combined together, each of which contained forty plates of zinc and as many of copper; what the interposed fluid was, is not mentioned.

1. One arc being applied to the mouth and another to the ear, (wetted with a solution of common salt) the jaw immediately began to quiver, the adjoining muscles were horribly contorted, and the left eye actually opened.

2. On applying the arc to both ears, a motion of the head was manifested, all the muscles of the face became convulsed, and the lips and eye-lids were evidently affected. The action was increased by making one extremity of the arc to communicate with the nostrils and the other with the ear.

3. On applying the conductors to the ear and to the rectum, such violent muscular contractions were excited, as almost to give the appearance of re-animation.

4. Volatile alkali was first applied to the nostrils and mouth, but without the least sensible action; but Galvanism immediately excited violent action. This however was still more increased by uniting both of these stimuli, and applying them together.

5. The fibres of the biceps flexor cubiti were laid bare, and one arc was applied to them, whilst the other remained in the ear. This produced violent convulsions of all the muscles of the arm.

6. One arc remaining in the ear, and the other being applied to an incision in the wrist, among the small filaments of the nerves and cellular membrane, a very strong action of the muscles of the fore-arm and hand was perceived. In these two last experiments the natural moisture of the part was sufficient to conduct the Galvanic influence without the intervention of salt water.

7. The short muscles of the thumb were dissected, and on applying the conductor to them, a forcible effort to clench the hand was induced.

8. The effect of other powerful stimulants, caustic ammonia, concentrated sulphuric acid, and the mechanical stimulus of pricking the fibres with the point of the scalpel, were tried by way of comparison with Galvanism, but without producing the smallest effect.

9. The thorax and pericardium being opened, and the heart exposed in situ, the conducting arc was applied to the *ventricles*, first upon its surface, then in the substance of its fibres, then upon the carneæ columnæ, and the septum ventriculorum, and, lastly, in the course of the nerves by the coronary arteries, but without being followed by the slightest contraction or muscular motion.

10. The arc was then conveyed to the *right auricle* and the appendix auricularis, and considerable contraction was immediately produced, even without the intervention of salt water. In the *left auricle* however, scarcely any motion was excited.

11. Conductors being applied from the spinal marrow to the fibres of the biceps flexor cubiti, the glutæus maximus, and the gasterocnemius, separately, no considerable action in the muscles of the arm and leg was produced.

12. One

12. One of the conducting arcs being applied to the spinal marrow, and the other to the sciatic nerve, (which was exposed between the great trochanter and the tuberosity of the ischium, and dissected out from its sheath) no contraction whatever ensued in the muscles. But the conductor being removed from the nerve to the adjacent muscular fibres and cellular membrane, as strong an action was manifested as in the former experiments.

13. By making the arc to communicate with the sciatic nerve, and the gastrocnemius muscle, a very feeble action was produced in the latter.

14. Conductors being applied from the sciatic to the peronæal nerve, scarcely any motion was excited in the muscles.

15. The sciatic nerve being divided about the middle of the thigh, and conductors being applied from the biceps flexor cruris to the gastrocnemius, there ensued a violent contraction of both.

These are the principal circumstances of the interesting experiments which are here related; and the reader will readily concur in the leading inference which Prof. Aldini deduces from them, namely, that the power of Galvanism, as a stimulant, is stronger than any mechanical action whatever, and that hence it affords very powerful means of resuscitation in cases of suspended animation under common circumstances, perhaps superior to any that are usually employed. This consideration may serve to give this study additional interest to those who are not satisfied with any object of philosophical pursuit, without discovering in it an immediate prospect of benefit to mankind. The physiologist however will not fail to perceive the variety of curious questions for future inquiry, involved in the singular unsusceptibility of the ventricles of the heart to a stimulus which powerfully affects every other muscle of the body, and in the habitude of muscle with this influence compared with that of nerve and medulla spinalis.

From the circumstance of the rapid exhaustion of the power of the troughs, and the extent of active metallic surface requisite to produce the Galvanic action in sufficient intensity to exhibit the above phenomena, the Author infers the probability that the method of coating nerves with metallic surface, as first practised by Galvani, (on frogs and cold-blooded animals) serves merely to conduct the fluid pre-existent in the animal system; whereas, with Volta's Galvanic batteries, the muscles are excited to action by the influence of the apparatus itself.

Hence again, the Galvanic action, as excited by the batteries, may be conveyed to a greater number of points, and consequently be rendered more powerful in producing muscular contraction, if at the same time the assistance of metallic coatings be resorted to, and the two methods of Galvanic excitement be combined.

The Author, however, does not enter into this subject, but reserves it for two complete and interesting publications, which he announces for subscription, *(at Cuthell and Martin's, Middle Row, Holborn)* one of which will contain an Account of the late Improvements

provements in Galvanism, with the different experiments lately performed by himself (Aldini) in Bologna, Paris, and London; and the other will be an Historical View of the Origin and Progress of Animal Electricity and Galvanism, with an Account of the Life and Writings of Galvani.

One of the principal difficulties in instituting comparative experiments on the operation of Galvanism, is the perpetually varying energy of the pile or battery; a difficulty which it is the less easy to remove, as the test and measure of this influence in exciting muscular contraction is equally variable, according to the original force of vital action, or remaining susceptibility to stimuli which the animal organ possesses and retains.

A short account of the appearances on dissection are added by Mr. Carpue, with which we shall conclude our Review of this short but interesting publication. The blood in the head was not extravasated, but several vessels were prodigiously swelled, and the lungs were entirely deprived of air. There was a great inflammation of the intestines, and the bladder was fully distended with urine. In general, upon viewing the body, it appeared that death had been immediately produced by a real suffocation.

Observations on the Epidemical Diseases now prevailing in London, with their Divisions, Method of Treatment, Prevention, &c.; by ROBERT HOOPER, M. D. *Resident Physician to the St. Mary le Bone Infirmary, &c.* London, 1803. pp. 43, 8vo.

THE author employs the term *epidemic* as an aggregate, composed in the present instance of several epidemical diseases, in general considerably distinct from each other, but possessing many symptoms in common. This perhaps would be a just method of considering the present *Influenza*, if the distinction between the diseases could be fairly made out; for it is highly probable, that at a time when any epidemic is very generally prevalent, all the diseases common to the same season of the year should have an unusual tendency to spread abroad, and by assuming certain leading symptoms, should acquire a mutual resemblance.

This view of the subject pre-supposes that the peculiar epidemic is not contagious, but that it is produced by the state of the atmosphere, or some exciting cause to which every person is equally exposed, an opinion which the author adopts in its fullest extent. He does not attempt, however, an explanation of the immediate exciting cause of the prevailing epidemic; the remote causes which he gives, are the usual ones of catarrh and peripneumony, and do not apply with more peculiar force to the circumstances of the two last months, than to the same season of other years that have not been visited with any general epidemic.

The author then proceeds to consider "the symptoms which accompany most of the prevailing epidemical diseases." These are described with great accuracy, and in these the reader will find all that is generally

generally understood by the term *Influenza*, as now applied in common conversation.

The first of these is *Pain of the Head*, a very characteristic symptom; which has seldom if ever been absent. This is described sometimes as a sensation like the opening and shutting of the skull, sometimes a mere throbbing pain in one or both temples; at other times the whole head feels as if it had been beaten. This pain is constant, increases towards night, often almost to delirium. In many instances it is the only symptom of the epidemic. It is relieved by leeches to the temples, blisters behind the ears, and in relaxed habits, by volatile and stimulating lotions.

Pain in the Chest. This has been found to be either of the acute pneumonic kind, increased by full inspiration and attended with dry cough and fever; or to be acute and lancinating, often shifting its place, shooting to the back and shoulders, and apparently confined to the muscles of the thorax. The former species required the vigorous antiphlogistic practice suited to peripneumony; the latter the more moderate and mixed practice employed in pneumonia notha.

Pains of the Limbs; a symptom which has been almost peculiar, and as characteristic of the present Influenza as the head-ach. These pains have a great general resemblance to rheumatism, are attended with a quick pulse and a white rheumatic tongue, but scarcely in a single instance has the limb been swelled. In coughing, this pain shoots down from the head and neck along the course of the spine and large nerves.

Dry and contracted Skin. This is only at the beginning of the disorder, for perspiration has in general been remarkably easy to excite by antimonials and diaphoretics.

Pulse frequent, but in general soft; and otherwise natural, except true peripneumony has been present. In this respect it much resembles the pulse of peripneumonia notha.

Tongue, uniform in its appearance, and very characteristic. From the beginning to the termination of the disease the tongue has been white in the centre, red at the edges, and studded with very florid papillæ.

State of the Bowels; almost always costive.

Catarrhal Symptoms; constant coughing, slight sneezing, soreness of the nostrils, and great defluxion from the nostrils and mouth.

Prostration of Strength; very considerable throughout the disease, and embarrassing to the practitioner, on account of its interfering with the vigorous depleting practice necessary to the peripneumony when present. Fainting has been a very common and very alarming accident, which has occurred in most of the cases that have terminated fatally.

Vertigo, Delirium, Coma; these symptoms have not been common; sometimes the acuteness of the head-ach has produced some degree of vertigo, but comatose delirium has only attended the true pneumonic cases, and in general was the precursor of a fatal termination.

Vomiting,

Vomiting, has occurred spontaneously in a few instances, but with little relief to the head-ach. The author ascribes it to peritoneal inflammation of the stomach.

The above is a short abstract of the author's account of the leading symptoms of the epidemic, symptoms which he gives as the peculiar character of the epidemic abstractedly considered. He next proceeds to the species of epidemical diseases now prevalent, of which he enumerates the following:

1st. *Peripneumonia vera*, in its genuine character, requiring a cautious but decided antiphlogistic and depleting practice. 2d. *Peripneumonia notha, or rheumatism of the chest and its viscera*, principally distinguished from the former by the constant shifting of the pains. This has been relieved by blisters, stimulating liniments, ether and Dover's powder internally, and light opiates, together with calomel to relieve the bowels. 3d. *Catarrhus, or cold from contagion*, in which all the ordinary symptoms of catarrh were present, but with much more than usual severity. It has been treated with lac amygdalæ and nitre, syrup of poppies, light diaphoretics, and opiates. In this form, the disorder has been almost an ephemeral. 4th. *Febris rheumatica, or true rheumatic fever*, beginning with severe pain over every part of the body without exception, swelling of the face and eyes, and a white tongue with red edges, but rarely swelling of the limb. The greater number who have suffered under this form of the epidemic were men. For the cure, blood-letting has sometimes been employed with advantage; antimonials, salines, aperients and opiates, always useful.

The Author adds the appearances on dissection, which, as might be expected, have varied considerably, since the fatal events have arisen from several distinct causes.

Such are the general contents of this very interesting Treatise, which we earnestly recommend to all our Readers, as containing much important information concerning the epidemic which has been so generally prevalent in this metropolis for several weeks.—As a nosological history, much might be objected as to the form under which the Author has introduced his observations; and we cannot think that he has succeeded in his attempts to mark the limits of (what, perhaps, is in its nature illimitable) the morbid symptoms peculiar to, and characteristic of, the prevailing epidemic, and those of the specific diseases to which these symptoms appear to be attached. The matter of fact, however, contained in this Treatise is highly valuable, and the practice laid down is judicious and discriminative; nor is this of small importance in the present emergency, since the concurring testimony of all who are professionally concerned in attending the sick, or in doing the last offices to the deceased, puts it out of doubt that the mortality in London and the adjacent districts, has been and still is unusually great; and that to a great proportion of it, something of a common cause or character of disease may be ascribed.

MEDICAL AND PHYSICAL INTELLIGENCE.

[FOREIGN AND DOMESTIC.]

Dr. HENNING, of Zerbst, relates in his Contributions to Practical Medicine, several cases of hæmorrhagies, in which the phosphoric acid was successfully employed. The first time he tried this remedy, was in a lady thirty-one years old, of a full and plethoric habit, who had always suffered several irregularities in her menses, and was so extremely sensible and irritable as to be easily thrown into nervous fits. On the 22d of October, 1800, her menses came on, attended with different complaints, pains, &c. when a sudden fright excited convulsions, oppression in the chest, and congestions of blood in the lungs and the face, and the next day an hæmorrhagy of the uterus supervened. Mr. H. being sent for, ordered such remedies as are usually employed in this case; but the state of the patient having become worse the next day, he had recourse to the phosphoric acid, of which ten drops in half a tea cup full of water were to be taken every hour. She had hardly taken the second dose, when the hæmorrhagy began to diminish, and before she had consumed half a drachm of the acid, it had entirely ceased. Dr. H. then administered a concentrated infusion of the Peruvian bark, to which he added half a drachm of phosphoric acid; of this mixture the patient took half a tea cup full four times a day, and by this means recovered within eight days.

A blacksmith of an athletic habit was attacked by an hæmoptisis, with stitches in the breast. After twelve ounces of blood had been taken from him, and a blister applied to the painful place, he was ordered to take ten or twelve drops of phosphoric acid every hour. The next morning the pains and hæmoptysis were entirely gone, and the man found himself able to return to his work.

In cases of direct asthenia of the vessels this remedy proves particularly efficacious, as will be seen from the following cases.

A pregnant woman, twenty-eight years of age, who had already had four children, and miscarried twice, was afflicted in consequence of a sudden fright, with an hæmorrhagy of the uterus, which threatened to cause a premature delivery. Mr. H. immediately gave the phosphoric acid from ten to fifteen drops every hour, and placed the patient in a horizontal situation. The pulse was small and slow. It is surprising, Mr. H. observes, what a quick and evident effect was produced here by two drachms of that acid; all the alarming circumstances disappeared the next day, the patient found herself a little stronger, the pulse had risen, the appetite was better

better, and she was in pretty good spirits. The phosphoric acid being in the same manner continued, she was restored to health within a few days, and at the proper time delivered of a healthy child.

A woman in childbed was attacked the third day after her delivery with a violent hæmorrhagy of the uterus, which required instant assistance. Dr. H. being called, found the patient cold, the face pale, pulse hardly perceptible, and the blood gushing out from the uterus. He immediately administered ten drops of phosphoric acid, and introduced a sponge, which was dipped in a mixture of one drachm of phosphoric acid and two tea cups full of water, into the vagina. The patient, who was almost half dead, recovered a little, after having for two or three hours continued the phosphoric acid: and though she was extremely weak the night after, she found herself much better in the morning; she had a quiet sleep for an hour, she was equally warm, and in a gentle perspiration; the lochiæ flowed in just quantity. She complained, however, of thirst, and was so extremely feeble, that the least exertion would make her swoon away; pulse weak. Some broth was given her from time to time, and the acid was continued every four hours. Being not worse the next day, she was ordered to take the following mixtures: ℞. Acid. phosphor. dr. ß. aq. cinamom. unc. iv. syrup. rub. idaei unc. j. D. S. every two hours a table spoon full to be taken. The next day he found the patient tolerably well, the hæmorrhagy had ceased, and the lochiæ were moderate; the breasts however were not yet filled with milk; pulse fuller and more regular; thirst diminished. A more nourishing diet was ordered, and a decoction of the bark prescribed. Towards the evening she was restless, complained of head-ach, shivering, tension under the arms; lochiæ were more copious, the belly extended, &c. all which symptoms however Dr. H. derived from the secretion of the milk. The next morning, after having much perspired, she found herself more easy, and the breasts began to be filled. The medicines were continued. Thus the patient grew gradually better, the lochiæ diminished, the fever had ceased, and after eight days she entirely recovered.

The phosphoric acid is, above all, of singular service in scorbutic hæmorrhagies, of which Dr. H saw two or three instances where it effected a cure, after other remedies had been employed without success.

M. Dubois, Principal Surgeon to the Hospital of the Medical School, (Ecole de Perfectionment ci devant St. Come) has applied moxas with success in two cases of loss of speech after fever. The patients had lost entirely any power over these organs for a very considerable time. In one case, the speech returned after the second application to the back of the neck, or rather between the shoulders. In the other, though the effects of the application were manifest on the part, yet the person was not compleatly cured till after

after a third application. The modus operandi of these remedies is by effecting the nervous excitement which they induce.

M. Bosquillon, Docteur Regent of the ci-devant Faculty of Medicine of Paris, Ancient Professor of Surgery and Materia Medica, has lately published a Memoir to prove that Hydrophobia is a disease incapable of being communicated; in short, that it is a disease without any real existence. This he endeavours to prove, in part, by the History of Medicine: He finds no mention made of it in the works of Hippocrates; Aristotle says it is a kind of phrenzy peculiar to the dog, and capable of being communicated to every animal except man. Nuardin, in a poem on the subject of poisonous animals, does not notice it; Plutarch speaks of it as a new disease. If canine madness be a disease which at all times existed, but which was originally not communicable to man, some change must have taken place in his constitution. Dr. B. brings some facts, unnecessary to state, in order to prove that this is merely a kind of mania, a conceit, the result of apprehension from having been bitten. There is a vulgar saying, that conceit is as bad as consumption, if it kills; and we may say, in this case, that it is as bad as Hydrophobia. The arguments to disprove this opinion of Dr. B. will dart on every mind.

Mr. Pepys, jun. has lately constructed the most powerful Galvanic apparatus that has been yet produced. It consits of 60 pair of zinc and copper-plates, disposed in two troughs, constructed on Mr. Cruikshank's plan, but with some accompanying arrangements which are extremely convenient and useful. The experiments made with this apparatus by Mr. Pepys, on the deflagration of metals, were the most brilliant and splendid ever beheld in London; of which the following account will give some idea: The troughs were filled with 32 pounds of water, mixed with two pounds of concentrated nitrous acid. With this charge, iron-wires of $\frac{1}{200}$ to $\frac{1}{10}$ of an inch in diameter were deflagrated with great splendour. A number of the small ones, twisted together, produced somewhat like a little brush deflagration.—Charcoal of box-wood was not only deflagrated at the place of contact, but remained permanently red-hot for near two inches in length.—Lead-foil burnt with great vividness, becoming red-hot, and emitting a small volcano or adjutage of red sparks with the flame.—Tin-foil burnt with great splendour, with smoke and sparks.—Dutch leaf or brass-foil deflagrated vividly, with smoke and a profussion of sparks.—Silver-leaf burnt with an intense vivid green light.—Gold-leaf deflagrated with a white bright light.—Tin-wire $\frac{1}{8}$ of an inch in diameter, fused, burnt, and oxidated, with great splendour.—Platina-wire $\frac{1}{16}$ of an inch in diameter, became red-hot, white, and fused in globules at the contact.—Gunpowder, phosphorus, and inflammable substances, are instantly fired by contact with conductors armed with charcoal.—The Galvanic power was capable of deflagrating charcoal,

charcoal, after passing through sixteen persons with wetted hands joined.

LIST of the OFFICERS and COUNCIL of the MEDICAL SOCIETY of LONDON, for 1803.

PRESIDENT.

1 Dr. James Sims

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1 Dr. Sayer Walker

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1 Mr. Hurlock

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1 Dr. Robert Hooper
2 Mr. Aikin

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1 Dr. Marcet

COMMITTEES.

I. THEORY AND PRACTICE OF PHYSIC.

1 Sir J. M. Hayes, Bart.
2 Dr. Hulme
3 Dr. Lettsom
4 Dr. Saunders
5 Dr. Bradley

II. ANATOMY AND PHYSIOLOGY.

1 Dr. Jenner
2 Mr. Andree
3 Mr. Abernethy
4 Mr. Astley Cooper
5 Mr. Macartney

III. SURGERY.

1 Mr. Ford
2 Mr. Norris
3 Mr. Ware
4 Mr. Forster
5 Mr. Blair

IV. MIDWIFERY.

1 Dr. John Sims
2 Dr. Poignand
3 Mr. Ridout
4 Mr. Webb
5 Mr. Ring

V. MATERIA MEDICA AND PHARMACY.

1 Dr. Yelloly
2 Dr. Curry
3 Mr. Jackson
4 Mr. Field
5 Mr. Spry

VI. BOTANY AND NATURAL HISTORY.

1 Dr. Elliott
2 Dr. Rogers
3 Dr. Pearson
4 Dr. Dimsdale
5 Mr. Chamberlaine

VII. NATURAL PHILOSOPHY AND CHEMISTRY.

1 Dr. Babington
2 Dr. Pinckard
3 Mr. Parkinson
4 Mr. J. H. Hooper.
5 Mr. Seaton

ANNIVERSARY ORATION FOR NEXT YEAR.

1 Dr. Haighton

REGISTRAR.

1 Mr. Charles Aikin

A letter from Capt. KEYT, of the 51st regiment, dated Columbo, September 23, 1802, to Mr. EATON, of Halton, contains the following paragraph :—" Within a few days vaccine virus has arrived in Ceylon, from Bombay, on small threads; and one Cyngalese woman

woman has taken the infection by inoculation. Mr. North, the governor, is endeavouring to extirpate the small-pox, by inviting the natives to undergo the operation of inoculation with vaccine virus."

It is with pleasure we can inform our readers, that Mr. Wilkinson's work on the Broad-leaved Willow Bark, with a coloured plate of the same, is in great forwardness, and will be published some time in the spring of the present year.

Dr. Jameson, of Bloomsbury, is writing a Treatise, which will be published next month, entitled An Enquiry into the Effects of Climate upon the Human Body, to discover the causes of the Catarrhal Epidemic which has prevailed this Spring, and in former years, under the name of Influenza.

To CORRESPONDENTS.

We have again postponed the *Observations* on the Proposal for the radical Cure of Bubonocele, principally because,

1. The chief object of our Journal is to *encourage* and disseminate all improvements connected with Medical science; but these observations are calculated, and apparently designed, to discourage the proposed operation.

2. We wish to give experienced surgeons more time to consider of the proposal in the state in which it is laid before them.

Our readers may perhaps be desirous of knowing on what grounds it is discouraged in the *Observations* abovementioned, and we see no objection to the stating of them.

It is said that the structure of the parts is such, that the complaint will return, or the cure be only temporary. This is but an opinion, and the opinion of the proposers is in direct opposition to it.

It is also said that the operation was many times performed by a Mr. Lee, and never with success; but this Mr. Lee is represented by the writer, as a character of little respectability or professional reputation, and therefore no inference can be drawn from his want of success.

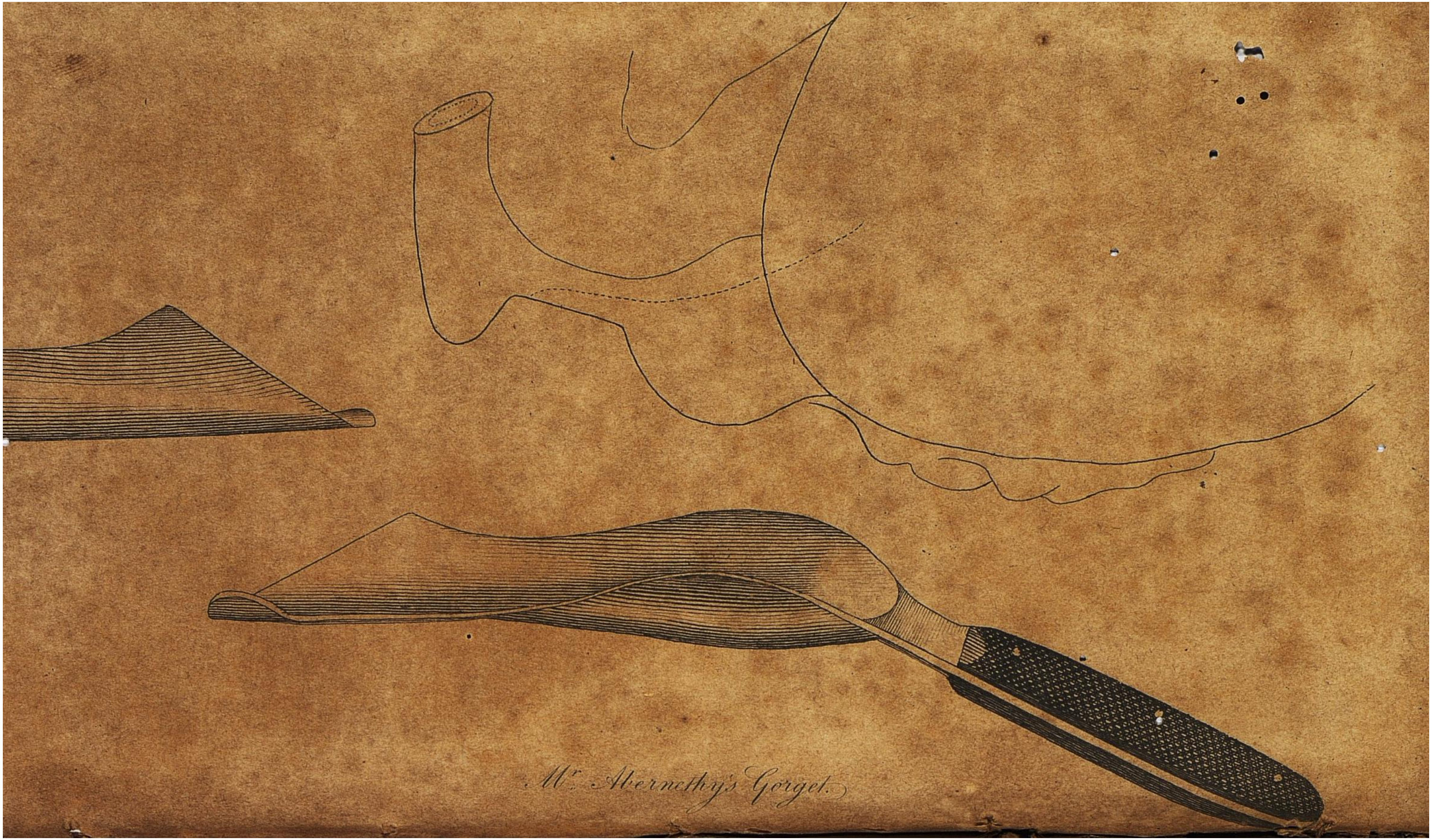
We have received some useful practical observations on the furniture of a sick chamber from Mr. Marson, and beg him to continue them, as we think them well deserving the attention of the public.

We have also received, from our Correspondent at Paris, a most interesting coloured engraving, representing the appearance of sections of the different kinds of Calculi depending on their constituent parts; but it will require a month to get it properly executed.

We are moreover favoured by an excellent Analysis of a most learned and (in Denmark) celebrated work, by Prof. Hensler, on Leprosy, a disease now scarcely known in Europe but by name. We hope the same will soon be said of the Small-pox. This interesting Analysis is delayed on account of the difficulty of procuring suitable types for the Asiatic quotations.

Communications are received from Drs. Mossman and Noehden, Messrs. Ramsay, Okes, Indagator, Medicus, B. G. and a Country Practitioner.

The Editors earnestly request their Correspondents to send them an account of the commencement, continuance, and symptoms of the present Epidemic, and their opinion respecting its contagious nature.



M^r. Abernethy's Gorget.